BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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In The Matter of the Application of SAN DIEGO GAS & ELECTRIC COMPANY (U 902 E) for a Certificate of Public Convenience and Necessity for the South Orange County Reliability Enhancement Project	Application 12-05-020

SAN DIEGO GAS & ELECTRIC COMPANY'S OPENING COMMENTS ON PROPOSED DECISION OF ALJ FARRAR GRANTING CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO THE SAN DIEGO GAS & ELECTRIC COMPANY TO IMPROVE RELIABILITY IN ITS SOUTH ORANGE COUNTY TERRITORY

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Pursuant to Public Utilities Commission's ("Commission") Rule of Practice and Procedure 14.3(b), San Diego Gas & Electric Company ("SDG&E") respectfully submits opening comments on Administrative Law Judge ("ALJ") Farrar's September 26, 2016 Proposed Decision Granting Certificate Of Public Convenience and Necessity ("CPCN") to SDG&E to Improve Reliability in its South Orange County Territory ("Proposed Decision" or "PD").

I. INTRODUCTION

SDG&E filed its CPCN application for the South Orange County Reliability Enhancement Project ("Proposed Project") in May 2012, after the California Independent System Operator ("CAISO") approved the project in its 2010-11 Transmission Plan. SDG&E proposed the project to ensure safe and reliable electric service to the approximately 300,000 residents and 12,000 businesses who SDG&E serves in South Orange County. The Proposed Project would leverage existing facilities, land and infrastructure to rebuild SDG&E's existing Capistrano Substation (now over 60 years old) to provide a second source of power to the area, which currently is dependent on transmission lines from Talega Substation. The Proposed Decision and President Picker's Alternate Proposed Decision agree that a project is needed, but disagree as to which project would better serve customers.

The Proposed Decision would deny SDG&E a CPCN to construct the Proposed Project. Instead, the Proposed Decision would provide that SDG&E is granted a CPCN "for, and shall begin to implement, Alternative J (the Trabuco Alternative) with the Talega modification set forth herein."[1] However, the Proposed Decision also states "we lack sufficient information to assess the legal hurdles, likely costs, and ultimate feasibility of such an endeavor," and orders SDG&E "to identify any legal and regulatory requirements, specify any necessary upgrades to its 138 kilovolt system, and file an application for the two transformer addition related to Alternative J."[2]

In short, the Proposed Decision would approve Alternative J—and order SDG&E to then determine its

[1] Proposed Decision at 58 (Ordering Para. 2).
[2] Proposed Decision at 44, 58 (Ordering Para. 3)(emphasis added).

feasibility, scope, cost and environmental impacts. On its face, adoption of the Proposed Decision would violate the California Environmental Quality Act ("CEQA"). Moreover, the only competent evidence, from transmission planning and substation engineering experts, is that Alternative J as set forth in the Final Environmental Impact Report ("FEIR") is infeasible for many reasons.[3] If altered to be physically feasible and to address the reliability concerns solved by the Proposed Project, SDG&E estimated that Alternative J would cost at least $518 million to $634 million, in contrast to the $383.6 million estimated cost of the Proposed Project. This sum does not include property acquisition or reliability upgrades that likely will be required to mitigate the impact of interconnecting SDG&E's 138 kV system to SCE's 230 kV system—that is to be studied under the Proposed Decision. If the Commission were to adopt the PD, over four years after SDG&E filed its Application in May 2012, the residents of South Orange County would continue to face serious reliability concerns for at least another decade.[4]

The Proposed Decision does not present or address SDG&E's evidence regarding Alternative J, and misstates the evidence regarding the Proposed Project. The Proposed Decision's factual, legal and technical errors include, but are not limited to:

- Under CEQA, the Commission cannot approve Alternative J now (with an uncertain scope) and instruct SDG&E to file an application for a "two transformer addition" later. The Commission's CEQA analysis must consider the "whole of the project." The Proposed Decision would engage in forbidden "piecemealing." *See infra* at 21.
- Under CEQA, the Commission cannot approve Alternative J unless its environmental impacts have been adequately evaluated and discussed. Here, the PD defers evaluation of required work to later studies and a future application. The FEIR also fails to evaluate and discuss reasonably expected actions if Alternative J is chosen, including rebuilding the 138/12 kV Capistrano Substation, required 138 kV upgrades, potential reliability upgrades required by the SCE interconnection, and relocation of AT&T's Service Center. *Infra* at 21.
- The Proposed Decision fails to identify or discuss SDG&E's evidence that the Proposed Project is needed to address four reliability concerns in South Orange County. It overstates the Proposed Project's environmental impacts by summarizing "significant impacts" found in the Recirculated Draft Environmental Impact Report ("RDEIR") that were revised to "less than significant" in the Final Environmental Impact Report ("FEIR"). It asserts risks in the Proposed Project without discussing the evidence indicating such risks are extremely small.
- The only competent evidence, not addressed in the Proposed Decision, is that Alternative J is infeasible because a safe and reliable substation, that meets industry standards and complies with applicable water quality regulations, cannot be constructed in the space the FEIR allows for it. *See infra* at 9-10. Even though the FEIR only determines "potential feasibility," the ZGlobal engineering memo relied upon for that determination concedes that more space is required for a proper "breaker and a half" ("BAAH") configuration.[5]

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[3] Exh. SDG&E 4 (2nd Supp. Testimony at 23-75); Exh. SDG&E 5 (2nd Rebuttal Testimony at 2-4, 32-61).

[4] At least several years to study the impacts of interconnection to Southern California Edision ("SCE")'s system and obtain SCE and CAISO approval, Exh. SDG&E 2.2 (Supp. Testimony at 100-105), four years for a new CPCN application, and four years of construction. SDG&E Application, Appendix A.

[5] *See infra* at 10. FEIR, Exh. 1 (rev. DEIR at 3-18 (Alternative J is "potentially feasible"); FEIR, RTC, SDG&E Comments 347-23 (in response to technical comments on Alternative J's infeasibility, FEIR states "Alternative J meets the requirements under CEQA to be considered potentially feasible"); FEIR, Exh. 1 (rev. DEIR, App. R (ZGlobal Report at 5, Figure 1a)). The FEIR is

ORA and SJC's witnesses deferred to SDG&E's substation engineering expert on substation design, and Frontlines' witness is not an electrical engineer and has never designed a substation. *See infra* at 10-11.

- No party testified that Alternative J's "design comport[s] with Commission rules and regulations and other applicable standards governing safe and reliable operations."[6] It does not.
- Contrary to statements in the Proposed Decision, Alternative J would require upgrades to SDG&E's 138 kV system to avoid violations of mandatory reliability standards and to provide redundancy in the event of a Talega Substation outage. The FEIR did not evaluate the environmental impacts of such work and its cost is unknown. The Proposed Decision also fails to recognize the risks of Alternative J's SCE interconnection, which will cause significant delay, will cause loop flow, and is likely to have adverse impacts that will either require limits on flows on key transmission paths or currently unknown Reliability Upgrades.
- The Proposed Decision misstates the estimated cost of the Proposed Project. It fails to discuss SDG&E's evidence regarding the likely cost of Alternative J. It fails to make an apples to apples comparison by, for example, including the cost of rebuilding the 138/12 kV Capistrano Substation in the Proposed Project, but not in Alternative J, though it is undisputed that the 1954 Capistrano Substation must be rebuilt to continue providing reliable electric service.

SDG&E addresses these issues below. SDG&E's Opening and Reply Briefs provide more detail.[7]

II. ELECTRIC RELIABILITY CONCERNS IN SOUTH ORANGE COUNTY

The Proposed Decision fails to identify and discuss the above reliability concerns, or SDG&E's evidence relating thereto. SDG&E serves over 300,000 people (112,794 residential electric meters) and about 12,000 businesses (large commercial and industrial) in rapidly growing areas of South Orange County.[8] SDG&E serves these customers from seven 138/12 kV distribution substations, which are fed by a 138 kV transmission network that emanates from Talega Substation, which is the sole connection to SDG&E's 230 kV transmission system.[9] In this regard, the "South Orange County portion of the SDG&E service territory is unique, in that it is served by a single connection to the 230 kV bulk power system. The remainder of the SDG&E system (metropolitan San Diego and the rural portions of East San Diego County) is supplied through multiple 230 kV gateways."[10]

There are four significant reliability concerns in South Orange County ("SOC"):

- No later than 2020,[11] SDG&E's South Orange County system is expected to violate the mandatory North

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not admissible evidence on the issue of feasible substation design, *see infra* at 23-24, but the February 2016 ZGlobal report means the CEQA record does not support the FEIR's Alternative J.

[6] Scoping Memo at 9 (Issue No. 10) (emphasis added).

[7] The PD selects, and therefore SDG&E focuses on, Alternative J. If the City of San Juan Capistrano ("SJC") continues to advocate for Alternative F, SDG&E addressed its infeasibility in its Opening and Reply Briefs.

[8] Exh. SDG&E 1.3 (Opening Testimony at 1 ln.6-12, 6:3 – 7:7).

[9] Exh. SDG&E 1.3 (Opening Testimony at 8:9 – 9:1).

[10] Exh. SDG&E 1.3 (Opening Testimony at 93:3-6).

[11] SDG&E updated its Opening Testimony to recognize some NERC violations as early as 2016, but such testimony was stricken by the ALJ's November 9, 2015 ruling. To ensure compliance with Rule 1.1, SDG&E notes such testimony in Exh. SDG&E 1.2R at 51-60. CAISO testified to NERC Category C overloads by 2015. Exh. CAISO 502 (Sparks Test. at 3 fn. 2).

American Electric Reliability Corporation ("NERC") reliability standards.[12] The NERC requirements set a floor for electric grid reliability that SDG&E must meet.[13] SDG&E's Proposed Project will allow SDG&E to mitigate the expected NERC violations, but other proposed alternatives, including Alternative J, do not.[14]

- An outage of 230 kV or 138 kV service at or from Talega Substation will result in a loss of service to essentially all of South Orange County.[15] There are low-probability, but very real, events that could cause such an outage, including equipment failure, explosion, fire, earthquake, vandalism or terrorism.[16] The duration of such an outage "would depend upon the nature and extent of damage," and could be a few hours to weeks or months.[17] The estimated direct and indirect economic costs of a one day outage are $212 to $424 million, and for a three week outage are $2.3 to $4.7 billion.[18] Public safety and welfare impacts would be significant, increasing with duration, including: loss of traffic signals; likely school closures; potential loss of water and sewage service; and potential loss of gasoline supplies for residents to leave the area, obtain life necessities, or go to work.[19] While the NERC reliability standards do not require SDG&E to mitigate these "Category D" risks, SDG&E concluded, and CAISO agreed, that it is appropriate to do so given the consequences if such an event occurred.[20] SDG&E's Proposed Project provides a redundant second 230 kV source that mitigates this risk.
- SDG&E submitted undisputed testimony that Capistrano Substation, built in 1954, must be rebuilt to, "among other things, upgrade its current bus configuration to a more reliable configuration, replace deteriorating infrastructure and equipment near the end of its useful life, meet current seismic, safety and security standards, and allow 12 kV ties with neighboring substations that increase the reliability of the overall system."[21] "SDG&E does not consider it prudent to wait to replace equipment only after it has failed and interrupted customer service."[22] Capistrano Substation must be rebuilt to provide reliable electric service[23] and the only question is whether it is rebuilt as a 230/138/12 kV substation, thus hosting a second 230 kV connection for South Orange County, or as a 138/12 kV substation, serving mostly San Juan Capistrano.[24]
- With the existing system, many events will interrupt customer service in South Orange County, including: 29 scenarios of a forced outage of one piece of transmission equipment during routine planned maintenance

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[12] Federal Power Act § 215, 16 U.S.C. § 824o; Federal Energy Regulatory Commission ("FERC") regulations, 18 C.F.R. § 40.2; Pub. Util. Code § 345 ("The Independent System Operator shall ensure efficient use and reliable operation of the transmission grid consistent with achievement of planning and operating reserve criteria no less stringent than those established by the [WECC] and the [NERC]"); CAISO Transmission Control Agreement.

[13] *E.g.,* Exh. SDG&E 1.3 (Opening Testimony at 2:15 – 3:4, 16:4-11).

[14] *See* SDG&E Opening Brief at 40-50 for a summary of evidence with respect to all alternatives.

[15] *E.g.,* Exh. SDG&E 1.3 (Op. Testimony at 1:17 – 2:6, 40:19 – 42:11); Exh. SDG&E 2.2 (Supp. Testimony at 2:25 – 42:21).

[16] Exh. SDG&E 1.3 (Opening Testimony at 9:8-10); Exh. SDG&E 2.2C (Confid. Supp. Test. at 2-39).

[17] Exh. SDG&E 2.2 (Supp. Testimony at 39:4-6, *generally* 39-42).

[18] Exh. SDG&E 2.2 (Supp. Testimony at 152, Table 2). No party challenged this testimony.

[19] Exh. SDG&E 2.2 (Supp. Testimony at 162-66). The Commission recently noted: "Without power, numerous unsafe conditions can occur. Traffic signals do not work, medical life support equipment does not work, water pumps do not work, and communication systems do not work. As the California Legislature recognized in § 330(g), '[r]eliable electric service is of utmost importance to the safety, health, and welfare of the state's citizenry and economy.'" Decision 12-04-024 at 7, 29-30.

[20] Exh. SDG&E 3.2 (Rebuttal Testimony at 17:6-19).

[21] Exh. SDG&E 1.3 (Op. Testimony at 68). In D.06-09-022, the Commission rebuked SDG&E for not moving more quickly to rebuild the over 40 year old Main Street Substation to ensure reliability. *Id.* at 2, 11. Here, SDG&E's Application has been pending since May 2012.

[22] Exh. SDG&E 1.3 (Op. Testimony at 68).

[23] Exh. SDG&E 1.3 (Op. Testimony at 81:19–83:20); Exh. SDG&E 2.2 (Supp. Testimony at 62-65).

[24] SJC and Frontlines agree it should be rebuilt. E.g., Exh. SJC 300 (Shirmohammadi Testimony at 7:9-11, 13:3-11); Exh. SJC 303 (Shirmohammadi Rebuttal Testimony at 6:16-17).Tr. at 1337:6-17 (Frontlines Ayer).

events at Talega Substation, which would drop all customers; 28 such scenarios that would force SDG&E to shed significant portions of its SOC customers; 80 such scenarios at other South Orange County substations that would drop 31% to 71% of SOC customers; 18 NERC Category C violations that would require SDG&E to drop customers after one outage; and 14 Category C "load shedding" scenarios that would require SDG&E to drop customers after two outages.[25]

SDG&E's Proposed Project mitigates all four of these reliability concerns at an estimated cost of $383.6 million +/- 10%.[26] The Project rebuilds the aging Capistrano Substation as a 230/138/12 kV substation on existing SDG&E substation property and constructs a new double circuit 230 kV transmission line by replacing existing facilities and using existing rights of way.[27] Because Capistrano Substation is adjacent to the electrical load center for South Orange County, adding a second 230 kV source there also avoids the need for additional work to upgrade SDG&E's 138 kV network to solve NERC violations and load shedding risks.[28]

III. THE PROPOSED PROJECT HAS VERY LIMITED ENVIRONMENTAL IMPACT

The FEIR finds the Proposed Project has only two "significant and unavoidable adverse environmental impacts."[29] First, the Proposed Project's air emissions during construction will exceed the South Coast Air Quality Management District (SCAQMD) "significance threshholds,"[30] but these temporary emissions in total are less than 1% of the SCAQMD daily emissions inventory.[31] All Alternatives, including Alternative J, have a similar impact.[32]

The FEIR also finds that the Proposed Project would have a significant impact on an historic resource, *i.e.*, an old utility structure on the Capistrano Substation property, if it is found eligible for the federal National Register of Historic Places (NRHP). As the FEIR reveals, the CPUC consultant found it ineligible and the Keeper of the NRHP declined to find the structure eligible for the NRHP on September 22, 2015.[33] A year has passed. President Picker's Alternate Proposed Decision properly finds no significant impact to a historical resource.

The Proposed Decision should, but does not, discuss the FEIR's findings. Instead, the Proposed Decision at 15 states: "In addition, the Recirculated DEIR identified additional significant impacts on biological resources,

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[25] Exh. SDG&E 1.3 ((Op. Testimony at 91:22 – 92:2, 93:11-21, *generally* at 42-67); Exh. SDG&E 2.2 (Supp. Testimony at 43:9-25 (partial load loss)).
[26] Exh. SDG&E 2.2 (Supp. Testimony at 125).
[27] Exh. SDG&E 1.3 (Op. Testimony at 3-4).
[28] Exh. SDG&E 1.3 (Op. Testimony at 99:1-9); Exh. SDG&E 3.2 (Rebuttal Test. at 35:23 – 36:5).
[29] FEIR at ES-4.
[30] FEIR, Exh. 1 (rev. DEIR at 4.3-9, 4.3-13).
[31] FEIR, Exh. 1 (rev. DEIR at 6-15:25-27.
[32] *See, e.g.,* FEIR, Exh. 1 (rev. DEIR at 5-28 (Alt. F), 5-32 (Alt. J). While the FEIR asserts that Alternative J will have less of an air quality impact than the Proposed Project, the FEIR fails to include the rebuild of the Capistrano 138/12 kV Substation in the Alternative J analysis while including it in the Proposed Project analysis. *Id.* The FEIR also fails to include demolition of the AT&T building, even though it is contemplated by its supporting engineering document. *Id.* at 5-31 & App. R (ZGlobal Report at 5, Fig. 1a).
[33] FEIR, Exh. 1 (rev. DEIR at 4.5-16).

cultural resources, and land use and planning from construction and operation of the proposed project that were not previously disclosed in the DEIR." The Proposed Decision does not reveal that the FEIR revised the RDEIR to find that the impact on biological resources and land use and planning would be "less than significant."[34]

IV. THE PROPOSED DECISION OVERSTATES RISKS TO THE SOCRE PROJECT

The Proposed Decision asserts "There are outage risks which SDG&E failed to identify that are better addressed by project alternatives other than the SOCRE Project."[35] The PD at 31-32 cites only "FRONTLINES Opening Brief" for these claims, and does not discuss the evidence.

The PD recounts Frontlines' claims that an event at a rebuilt Capistrano Substation will result "more than one-third of South Orange County customers to be without power for a day" because it could result in a loss of power to customers served by Capistrano and Laguna Niguel Substation (which is served through Capistrano).[36] As SDG&E's Mr. Smith pointed out, it would depend upon the nature of the event. "If the 138 kV west bus is down for maintenance in Capistrano and there is a fault on the east bus," then "You don't lose any load at Laguna Niguel and Capistrano."[37] Further, if a catastrophic event "completely removed the 138 kV bus from service," SDG&E would install jumpers within hours to re-connect Laguna Niguel until the Capistrano circuits were restored.[38] Frontlines notes that, should this event occur during peak loads, SDG&E may need to curtail service to avoid overloading lines during such peak loads, but SDG&E's Mr. Smith noted that peaks are brief and normal circuits should be restored soon.[39] Capistrano distribution customers would be switched to neighboring substations.[40]

Intervenors also argued that, under the Proposed Project, a fire or seismic event could take out the 230 kV lines that serve both Talega Substation and the rebuilt Capistrano Substation. For a fire to affect both 230 kV lines to Capistrano, which are geographically separated on opposite sides of Talega, the fire would have to be so large as to engulf the substation, a much bigger problem.[41] Further, "SDG&E has never experienced the loss of a transmission steel pole or lattice tower due to any kind of fire," and the Proposed Project 230 kV lines would be on steel poles; by contrast, wooden structures, like those supporting the existing 138 kV lines from Talega, burn.[42]

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[34] FEIR, Exh. 1 (rev. DEIR at 5-3, Table 5-1); FEIR, Exh. 1 (rev. DEIR at 4.4-48 to 50, 4.10-39 to 42).
[35] PD at 33, Finding of Fact 40
[36] PD at 32; Frontlines Op. Brief at 11-12; SJC Op. Brief at 19-20.
[37] Tr. at 1201:20-1202:11 (SDG&E-Smith) (designed that way). *Id.* at 1152:7-1153:26. SDG&E also can proactively install jumpers to protect Laguna Niguel during a maintenance outage at Capistrano. Tr. at 822:23-26 (SDG&E-Thomas).
[38] Tr. at 1149:26-1150:4, 1152:1-1153:26 (SDG&E-Smith); Tr. at 135:2-20 (SDG&E-Jontry); Exh. SDG&E 3.2 (Rebuttal Testimony at 66:6-13). Although SDG&E does not "guarantee" restoration time, Tr, at 920:18 – 921:13, its estimates are based on experience and expertise.
[39] Tr. at 1150:5-1152:27 (SDG&E-Smith).
[40] Tr. at 214:2-11 (SDG&E-Jontry).
[41] Exh. SDG&E 3.2 (Rebuttal Testimony at 30-31); Transcript at 672:10–674:18 (SDG&E-Thomas).
[42] Exh. SDG&E 3.2 (Rebuttal Test. at 30:13-20); Exh. SDG&E 2.2 (Supp. Test. at 11:22-33); Tr. at 60:2-12 (SDG&E-Mortier).

Even in the unlikely event that smoke or firefighting forces all of SDG&E's 230 kV lines out of service, such an outage is temporary and relatively short (hours).[43] As for earthquake, "SDG&E avoids installing transmission structures on seismic faults" and "Transmission structures are designed to withstand forces greater than earthquake shaking."[44] There is no evidence of serious outage risks to the Proposed Project.

V. ALTERNATIVE J IS INFEASIBLE

The Proposed Decision would approve some version of Alternative J and order SDG&E to then study its actual scope, system impact, cost and environmental impacts. The evidence, not discussed in the Proposed Decision, establishes that Alternative J is infeasible for a host of reasons.

The RDEIR presented a new Alternative J that proposed placing a new 230 kV substation on the "AT&T parking lot" adjacent to SDG&E's 138/12 kV Trabuco Substation and interconnecting it to the SCE 230 kV transmission system. The RDEIR included a "Conceptual Site Plan" for the expanded Trabuco Substation. The FEIR's Alternative J is essentially the same (but with two active transformers)—and the same "Conceptual Site Plan."[45] SDG&E's testimony that the RDEIR Alternative J is infeasible applies equally to to FEIR Alternative J.

In its Second Supplemental Testimony, Chapter 4, SDG&E testified that the RDEIR Trabuco Alternative is infeasible for numerous, independent reasons, including:

- Even if it were feasible to construct, it would cause loop flows on SDG&E's South Orange County system that will impact not only SDG&E's system, but the flows between SDG&E's system and SCE's system. As a result, the SCE interconnection will not be allowed without construction of necessary Reliability Upgrades to SDG&E's South Orange County 138 kV system, on SCE's system, potentially elsewhere in the CAISO-controlled grid and potentially elsewhere in the WECC system. The scope of these Reliability Upgrades will be determined through the years-long study process by SCE, CAISO and WECC—only then will the Commission know the true cost of this alternative and be able to assess all of its environmental impacts.
- Even if it were feasible to construct, it does not comply with mandatory NERC Reliability Standards. A valid NERC assessment requires that critical system conditions be analyzed. High flow from SDG&E to SCE stresses Path 43 and is considered a critical system condition. Power flow simulations with Path 43 stressed show violations of Applicable Ratings, which is a NERC violation. To prevent the violation, mitigations such as dispatch of more expensive generation, sectionalizing of the 138 kV system in South Orange County, or pre- and post-contingency load shedding would be required, all of which increase costs and reduce reliability for CAISO ratepayers generally and South Orange County customers specifically.
- Even if it were feasible to construct, it would delay ensuring reliable electric service to SDG&E's South Orange County customers for years while the impacts of an interconnection to SCE's transmission system are studied under SCE's FERC-approved Transmission Owner's Tariff, pursuant to the CAISO Transmission Control Agreement, and in a WECC Path Rating group.
- Even if it were feasible to construct, and setting aside needed mitigation of loop flow, it does not add 230 kV

[43] Exh. SDG&E 3.2 (Rebuttal Testimony at 30:21 – 31:10).
[44] Exh. SDG&E 3.2 (Rebuttal Testimony at 31:11-18).
[45] FEIR, Exh. 1 (rev. DEIR at 3-16 to 18).

power at South Orange County's load center, thus requiring upgrades to SDG&E's South Orange County 138 kV system to redistribute the power to the distribution substations within South Orange County.

- It does not rebuild the aging Capistrano Substation, which must be rebuilt to ensure reliable electric service to San Juan Capistrano residents.
- It is not feasible to construct or operate a safe and reliable 230/138/12 kV Trabuco Substation on the space allowed by the RDEIR Trabuco Alternative. The Recirculated DEIR provides a "Trabuco Substation Conceptual Site Plan" that is neither safe nor reliable, does not contain all necessary equipment, does not meet industry standards, and requires a non-standard design that is far inferior in terms of reliability to SDG&E's proposed San Juan Capistrano substation.
- The estimated costs of known elements of the RDEIR Trabuco Alternative, including a safe and reliable Trabuco Substation, a rebuilt 138/12 kV Capistrano Substation, and necessary 138 kV system upgrades, far exceed the estimated costs of the Proposed Project—and such costs do not include the unknown costs of Reliability Upgrades caused by the SCE interconnection.
- Finally, if the CPUC chooses to approve the Trabuco Alternative without knowing the necessary Reliability Upgrades, SDG&E, SCE and CAISO will still have to follow the procedures set forth in the FERC-approved tariffs and the system will continue to be required to meet NERC reliability criteria. Further studies may identify an interim measure of limiting flows on Path 43, thereby increasing reliance on local generation in San Diego and Los Angeles, reducing the ability for SCE to import renewable energy through Path 49, increasing energy costs to ratepayers, and increasing the risk of load shedding during system contingencies. It is unlikely that CAISO or WECC would accept such flow limits as a permanent mitigation measure, meaning that physical Reliability Upgrades would be required, resulting in further costs to CAISO ratepayers as well as environmental impacts. None of these results occur with SDG&E's Proposed Project, which does not interconnect to SCE.[46]

The Proposed Decision fails to discuss or address most of this evidence.

A. The Proposed Decision Does Not Accurately Present FEIR Alternative J

The Proposed Decision is unclear about what it purports to approve. The Draft EIR, issued in February 2015, did not include Alternative J or any interconnection at SDG&E's Trabuco Substation.[47] The August 2015 RDEIR added Alternative J, which found "potentially feasible" a 230/138 kV substation on the AT&T "parking lot" adjacent to Trabuco Substation that would be "connected" to existing SDG&E 138/12 kV equipment. The RDEIR proposed one "required" and one "spare" 230 kV transformer, connected in a non-standard single breaker, single bus (SBSB") design.[48] Following critical testimony and RDEIR comments, the FEIR defines Alternative J as

[46] Exh. SDG&E 5 (2nd Rebuttal Test. at 2-4). Each point is discussed in detail in Exh. SDG&E 4 (2nd Supp. Test. at 23-75).
[47] In May 2015, ORA and Frontlines served testimony proposing a Trabuco Alternative. SDG&E moved to strike it based on the Assigned Commissioner's Ruling that if "any party … wishes to present evidence on [alternatives], they should do so in the course the course of that environmental review process" and not in evidentiary hearings. March 30, 2015 Assigned Commr's Ruling Identifying Issues Requiring Evidentiary Hearing at 3. The ALJ denied SDG&E's motions without explanation. ALJ June 4, 2015 email to parties.
[48] RDEIR at 2-22 to 24, Fig. 3-5; FEIR, Exh. 1 (rev. DEIR at 3-16 to 18, shown in strikeout); Exh. SDG&E 4 (2nd Supp. Testimony at 58-59).

including "two, parallel 230-kV/138-kV transformers, each with a capacity of 392 MVA."[49]

The FEIR includes two 230 kV transformers.[50] Yet the PD at 43, referring to Frontlines rather than the FEIR, mistakenly asserts: "A significant element of the costs of Alternative J is the potential addition of a second 230/138 transformer at Trabuco Substation." Wrongly asserting that SDG&E opposes "this addition" (when SDG&E testified that two transformers in a BAAH configuration are required), the PD at 44 asserts:

> we lack sufficient information to assess the legal hurdles, likely costs, and ultimate feasibility of such an endeavor. Therefore, rather than adopt the Alternative J addition of a second transformer at the Trabuco Substation at this time, SDG&E should be directed to undertake the aforementioned studies and identify any legal and regulatory requirements, specify any upgrades to its 138 kV system it foresees, and file an application for the addition, if Alternative J is adopted.

(Emphasis added). The Proposed Decision repeats this instruction for SDG&E to study and apply for a "two transformer addition" in Conclusion of Law # 26 and Ordering Paragraph 3.

There is no "one transformer" Trabuco alternative. The PD relies upon Alternative J including two transformers in concluding that certain NERC violations and redundancy are addressed.[51] As set forth below, the only competent evidence is that two transformers, in a BAAH configuration, will not fit in the space allowed.

B. Under Alternative J, There Is Not Sufficient Space For a Safe, Reliable and Legal 230 kV Substation

SDG&E's expert substation engineer testified in detail that a safe and reliable 230 kV substation, meeting industry standards and compliant with applicable law, cannot be constructed on the AT&T "parking lot" as dictated by Alternative J. SDG&E's expert explained what is required for a safe and reliable substation design, SDG&E's standards and industry guidelines, reliable bus configurations, why a BAAH bus design is required for a 230 kV substation, and why a rebuilt Trabuco Substation would require a BAAH bus design.[52] He testified that the design shown in the RDEIR (and FEIR) Conceptual Site Design is not a recognized Institute of Electrical and Electronics Engineers ("IEEE") or industry standard, and does not meet SDG&E's standards for safety or reliability—including a lack of breakers to de-energize equipment, inadequate protective relaying, uncertain electrical clearances, inadequate drive aisles, fire safety requirements, or space to meet required water quality regulations.[53] He testified that 138 kV equipment would need to be changed to allow interconnection to a 230 kV switchyard.[54] SDG&E's expert testified that a safe and reliable 230/138/12 kV substation, which complies with water quality regulations,

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[49] FEIR, Exh. 1 (rev. DEIR at 3-16).
[50] FEIR, Exh. 1 (rev. DEIR at 3-16 to 18, Fig. 3-5); Exh. SDG&E 4 (2nd Supp. Testimony at 57:29-59:14).
[51] PD at 41, 42, 48, 49, 55.
[52] Exh. SDG&E 4 (2nd Supp. Testimony at 44-57); SDG&E Opening Brief at 46-50; Reply Brief at 32-35.
[53] Exh. SDG&E 4 (2nd Supp. Testimony at 57-68).
[54] Exh. SDG&E 4 (2nd Supp. Testimony at 63-64).

would require expanding the existing Trabuco Substation to the north (all of AT&T's property) and south.[55]

Even Energy Division's consulting engineer concedes Alternative J cannot be built on AT&T's "parking lot." Following criticism in RDEIR comments,[56] ZGlobal changed the RDEIR "Conceptual Site Plan" in an February 2016 report, which revised the Trabuco Alternative to include two 230 kV transformers in a BAAH configuration. ZGlobal's Figure 1a clearly shows construction where the AT&T building is located, not just the AT&T "parking lot." [57] Yet the FEIR continues to limit Alternative J to the AT&T parking lot, use the unrevised "Conceptual Site Plan, and assess environmental impacts as if the existing AT&T building remains.[58]

No party testified that Alternative J's substation"design comport[s] with Commission rules and regulations and other applicable standards governing safe and reliable operations."[59] CAISO, ORA and SJC agreed that the RDEIR Trabuco Alternative should be modified to include a 230 kV BAAH configuration.[60] Both ORA and SJC attempt to "loop in" the SCE transmission line rather than create a three terminal line, as proposed in the RDEIR (and FEIR) Trabuco Alternative.[61]

Intervenors offered no competent evidence that a safe, reliable and legally compliant substation can be constructed under Alternative J.[62] SJC relied on its consultant's "planning level" opinion, yet he repeatedly admitted that he has no substation design expertise and SDG&E's substation engineers will need to determine whether it is feasible to construct a safe and reliable 230 kV substation on the AT&T "parking lot" that conforms to industry standards and complies with state law, including the RWQCB Order.[63] Indeed, SJC's counsel objected to further questioning about his substation "design," stating: "He has not done detailed design work. I'm not sure what is added to the record by going step-by-step what detailed design work he has not done."[64] When SDG&E explained the need to show the witness had not considered the relevant factors to determine feasibility, scope or cost, the ALJ

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55 Exh. SDG&E 4 (2nd Supp. Testimony at 44-45); Exh. SDG&E 3.2 (Rebuttal Testimony at 108-112).

56 FEIR, RTC, SDG&E Comments 346-6, 347-23, 347-26 to 347-31.

57 FEIR, App. R (ZGlobal Report at 4-5 & Fig. 1a) ("The applicant would construct a 230-kV breaker and ½ scheme switchyard to loop-in the SONGS-Santiago 230 kV transmission line and include two 230/138-kV transformers with capacity to support the SOC load. Refer to Figure 1a for the Trabuco Alternative"). Conceptual Site Plan. This plan does not depict a full breaker and ½ bus scheme, however, it does provide the conceptual view of integrating a 230 kV bus and breaker yard as an extension to the existing Trabuco substation.")

58 FEIR, Exh. 1 (rev. DEIR at 3-16 to 18, Fig. 3-5);

59 Scoping Memo at 9 (Issue No. 10).

60 Exh. CAISO 505 (Sparks Supp. Rebuttal Testimony at 2); Exh. ORA 201 (Mee Reply Testimony at 9); Exh. SJC 304 (Shirmohammadi Reply Testimony at 2).

61 Exh. ORA 201 (Mee Reply Testimony at 9-10); Exh. SJC 304 (Shirmohammadi Reply Test. at 2-3).

62 SJC's claim that SDG&E has not done a "detailed engineering design," SJC Op. Brief at 29, is pointless. SDG&E performed sufficient work to determine it is infeasible. Exh. SDG&E 4 (2nd Supp. Testimony at 44-70); Exh. SDG&E 5 (2nd Rebuttal Testimony at 50-59).

63 Tr. at 485:11-486:24, 497:8-499:5, 503:11-504:6, 508:2-19, 513:14-21, 514:4-516:25, 517:8-20, 535:25-536:6, 537:23-538:19, 539:1-21, 550:7-552:10 (SJC-Shirmohammadi).

64 Tr. at 535:25-536:6 (SJC-Armstrong).

stated: "I believe he has answered that repeatedly. The horse has been beaten."[65]

ORA's witness also deferred to SDG&E's substation engineering experts as more knowledgeable, admitted that he had no design for a 230 kV Trabuco Substation, and that he had not "spoken with any professional substation engineer who has told [him] that it -- that a safe and reliable substation constructed in compliance with law and industry standards could be constructed on the AT&T parking lot."[66] He testified: "I'm thinking about this like we have this conceptual proposal. We can ask for any utility including SDG&E to propose a physical, you know, a design level details."[67] That is not evidence that a proper substation can fit on the allowed space.

Frontlines' witness is not an electrical engineer, has no electrical engineering training or experience, has never designed or constructed a substation or transmission line, and did not present any proposed design.[68]

In lieu of evidence, ORA and Frontlines point to an SDG&E "Trabuco Block Diagram" showing a rough potential layout of a rebuilt 230/138/12 kV Trabuco Substation, and transpose its 1.95 acre area that contains some 230 kV equipment onto the "2.3 acre" AT&T "parking lot" to claim it all fits.[69] As an initial matter, SDG&E testified this block diagram did not establish the necessary space.[70] Regardless, the diagram itself indicates that required elements are not contained within the box labeled 1.95 acres, showing two water quality basins entirely, and a voltage control device mostly, outside of that box.[71] Frontlines argues that equipment in the "box" does not take up all the space so there is room for water detention basins, but ignores testimony all the space is needed when access and electrical clearences are included.[72]

SJC's witness took a different, but equally flawed approach. He drew a box on a Google Earth image of the AT&T property and drew a box on a Google Earth image of SDG&E's Talega Substation around what he identified as SDG&E's 230 kV switchyard, claimed the boxes were the same size, and thus a 230 kV substation with fewer elements could fit on the AT&T property. This is the full extent of his "analysis."[73] Contrary to his claim,

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[65] Tr. at 536:7-16.
[66] Tr. at 1434-1446 (ORA-Mee).
[67] Tr. at 1437:6-27; see also id at 1441:15-17 ("I myself didn't do the design for the 230 kV switchyard at AT&T parking lot.")
[68] Tr. at 1327:1-9, 1331:12-14, 1333:16-18, 1340:23-1341:1, 1351:16-27 (Frontlines-Ayer); Exh. SDG&E 14 (Frontlines DR Response at 1-2).
[69] Frontlines Op. Brief at 14, 23-24 (citing Exh. Frontlines 401C, which refers to Exh. SDG&E 3.2, Attachment 39); Tr. at 1442:9-1443:12 (ORA-Mee) (citing same diagram at Attachment 55). Per the RDEIR at 2-171, the AT&T parking lot is "2 acres." *See* footnote 190 *infra*.
[70] Exh. SDG&E 3.2 (Rebuttal Testimony at 111).
[71] Exh. SDG&E 3.2, Att. 39); Tr. at 135:8-1037:19 (SDG&E-Iliev); Tr. at 1443:1-1445:28 (ORA-Mee). The ALJ stopped questioning regarding how Mr. Mee would fit those facilities on the AT&T "parking lot," noting "He never said he could do it, he would do it, where it would go.")
[72] Frontlines Op. Brief at 23 (citing Iliev); Tr. at 1036:13-1037:2, 978:24-979:13 (SDG&E-Iliev).
[73] Exh. SDG&E 8 (SJC DR Response 3); Tr. at 497:27-498:7, 508:20-509:5 (SJC-Shirmohammadi).

these boxes are not the same size (2.3 acres AT&T property vs. 2.8 acres at Talega).[74] Moreover, his "AT&T box" includes more area than the RDEIR (and FEIR) Figure 3-5 (referring to "2 acres" of AT&T property), extending into setback areas and blocking all access to the AT&T building on its south side.[75] More fundamentally, the 1978 Talega 230 kV substation is not comparable to what would be required at a new Trabuco 230 kV Substation, missing RWQCB-required hydromodification facilities, dynamic voltage control devices, and appropriate drive access, and reflecting a too-crowded and inadequate configuration that SDG&E seeks to fix, not duplicate at Trabuco.[76] SJC's witness admits his proposal is "planning level"; it is not sufficient.[77]

The Proposed Decision does not discuss any of this evidence. Instead, the PD at 42 states: "SDG&E opposes the Talega addition on claims that there is not sufficient space at the facility to allow the necessary construction. SDG&E's contention in this regard appears based on a company standard which SDG&E failed to document and itself does not appear to follow." As support, the PD asserts: "FRONTLINES provided evidence showing that SDG&E parked an office trailer for up to a year in the same space it asserts must be kept clear."[78]

The Proposed Decision is factually incorrect. First, the PD confuses Trabuco and Talega Substations.[79] Second, SDG&E's testimony regarding insufficient space was not based upon a single company standard nor did SDG&E "fail to document" them. Among much else, SDG&E testified:

SDG&E designs new substations to meet SDG&E standards and industry guidelines for safety and reliability, and to meet regulatory concerns, by considering the following basic physical requirements:

- Electrical clearances (physical separation of energized exposed conductor to other exposed conductor, grounded surfaces, and or personnel walkable surfaces). SDG&E uses the following industry references in determining safe clearances for substation equipment:
    - IEEE Std. 1427 - Guide for Recommended Electrical Clearances and Insulation Levels in Air-Insulated Substations.
    - IEEE Std. C37.30 - Standard Requirements for High-Voltage Switches.
    - ANSI C37.32 - American National Standard for High-Voltage Air Disconnect Switches Interrupter Switches, Fault Initiating Switches, Grounding Switches, Bus Supports and Accessories Control Voltage Ranges— Schedule of Preferred Ratings, Construction Guidelines and Specifications.
    - IEEE Std. 1313.1 - Standard for Insulation Coordination – Definitions, Principals and Rules.

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[74] Exh. SDG&E 5 (2nd Rebuttal Testimony at 55:14-24)

[75] Exh. SDG&E 5 (2nd Rebuttal Testimony at 55:25-56:9); Tr. at 502:16-27 (SJC-Shirmohammadi); Tr. at 1034:17-1035:7 (SDG&E-Iliev); RDEIR at 2-171.

[76] Exh. SDG&E 5 (2nd Rebuttal Testimony at 56:10-59); Tr. at 502:16-27 (SJC-Shirmohammadi). Dr. Shirmohammadi admitted many of the missing elements or was unaware of them. Tr. at 527:13-534:1.

[77] Tr. at 509:6-520:7 (SJC-Shirmohammadi). SJC quotes Dr. Shirmohammadi's reference to a GIS facility, but he admitted he had no such design. *Id.* at 508:2-19.

[78] PD at 42 n.80, citing to an ALJ, not Frontlines, question.

[79] The PD cites "Tr. Vol. 7, page 1027, at 7-16," to an ALJ question regarding "SDG&E Exhibit 5 page 40," which is testimony regarding ORA's proposed Trabuco Substation configuration.

- IEEE Std. 1313.2 - Guide for Application of Insulation Coordination.
- NESC- C2 - National Electric Safety Code

- Safe access to equipment
  - Drive aisles shall be designed to accommodate regional standards for all safety vehicles.
  - A transmission substation's drive aisle in front of transformers should be approximately 40 ft to allow for placement/removal of transformers and required work on the transformer
  - Drive aisles between an energized rack/bus, high voltage terminations and a fence/wall will be wide enough to allow safety and/or construction vehicles to safely turn, drive, and work– this is usually 25-30ft.
- Noise
  - The size of the site must allow transformer placements so that the decibel level at the property line meets the County noise requirements of the substation site or regulatory specifications.
- Fire safety (based on IEEE Std-979 IEEE Guide for Substation Fire Protection)
  - Access roads and gates must be at least 20 feet wide to accommodate emergency vehicles. Access roads inside the substation shall have adequate turning radius and access to all oil filled equipment.
  - Transmission Substations – transformers or oil containment (if required) should be a minimum of 50 feet to the wall or fence line. If this condition is not met, a fire barrier must be installed between the transformer and wall or fence.
  - Separation of a transmission bank should be at least 50 feet from the edge of the adjoining transformer's containment pit or a four hour fire barrier should be installed. The fire barrier should be placed a minimum of 4 feet away from the transformer radiators to allow for air cooling.
- Water Quality and Hydromodification
  - All new substation sites must meet space requirements for water quality and hydromodification management criteria as required by the Regional Water Quality Control Board. This is usually met through the use of underground infiltration tanks and above ground detention basins. SDG&E preliminary designs allow approximately 20-25% of space to meet these requirements until actual calculations can be done based on final site designs.
- Grounding
  - Ground studies must be done to determine the required ground grid that needs to be installed to safely dissipate fault current and allow for safe touch and step voltages for personnel and equipment protection. A smaller substation site may result in less area available inside the substation for the required ground grid, which may require additional mitigation and/or affect neighboring properties.
- Flexible operation.
  - Substation layout should include spacing to allow for safe construction and maintenance of all equipment allowing clear isolation points and proper clearance distances for these activities.
  - Substation layout should also include room for future growth due to unforeseen customer growth and/or potential large customer or generation interconnection.[80]

[80] Exh. SDG&E 4 (2nd Supp. Testimony at 47-48).

SDG&E applied these standards to determine that Alternative J did not provide sufficient space for a safe and reliable substation, able to comply with RWQCB water quality regulation. Third, the PD's reference to a temporary construction trailer at Talega Substation to dismiss all of the above standards is mistaken. As SDG&E's witness explained, "it's movable."[81] The questioning was with respect to the need for 40 feet of access to transformers for maintenance or replacement.[82] If a transformer needed to be maintained or replaced, it would have been moved.

The only other reference to this fundamental question—can a safe and reliable substation be built where Alternative J says it must--is equally inaccurate. Discussing the addition of a second transformer at Trabuco (which the FEIR already includes), the PD at 44 says: "In opposition to this addition to Alternative J, SDG&E argues that the Alternative J addition will require the acquisition of additional land …" and the PD then admits "we lack sufficient information to assess the legal hurdles, likely costs, and ultimate feasibility of such an endeavor." To the contrary, there is overwhelming evidence that the FEIR's two transformer Alternative J is not feasible within the space that the FEIR allows, *i.e.*, the AT&T parking lot. The FEIR did not evaluate the environmental impacts of taking more land and greater construction—the feasibility of Alternative J must be assessed on the FEIR's description.

C. Alternative J Fails to Mitigate NERC Violations and Is Not a Redundant Second Source

The PD at 49 and FF 51 mistakenly assert that Alternative J would mitigate potential Category C (N-1-1) violations, citing "the CEQA review of the applicant's power flow data." As set forth *infra* at 23-24, the "CEQA review" is not admissible evidence on the issue of need. Further, SDG&E testified that Alternative J (and Intervenors' various Trabuco Alternatives) would lead to expected NERC violations. Intervenors contend that SDG&E's modeling assumed flows that were too high, but a valid NERC assessment requires that critical system conditions, such as high flows within ratings, be analyzed.[83] To avoid violations of NERC TPL-001-4, SDG& would need to upgrade Transmission Lines 13836, 13816, 13846A and 13846C, add a dynamic control device at Trabuco ($89-$109 million), and replace the Talega STATCOM at the end of its useful life (another $89-$109 million).[84]

The PD asserts Alternative J is a redundant second source, *i.e.*, it can serve South Orange County if Talega Substation is lost.[85] To the contrary, even with two transformers, Alternative J would be unable to serve more than 469 MW of load due to the ratings of transmission lines connecting to Tabuco. Alternative J also requires upgrades to SDG&E's SOC 138 kV system to redistribute the power to the distribution substations within

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[81] Tr. at 1070:17 (SDG&E Iliev), 1069:13 ((SDG&E Iliev) ("white construction trailer").
[82] Tr. at 1065:23 to 1066:27 (SDG&E Iliev).
[83] Exh. SDG&E 4 (2nd Supp. Testimony at 29-33); Exh. SDG&E 5 (2nd Rebuttal Testimony at 7-11, 34-37, 49); Exh. CAISO 505 (Sparks Supp. Rebuttal Testimony at 3-4 & Table 1); Tr. at 405:8 – 406:9 (CAISO Sparks).
[84] Exh. SDG&E 4 (2nd Supp. Testimony at 36:13 – 37:14, *see also* 37 – 41).
[85] PD, FF 55 ("With changes at Talega and the installation of two transformers at Trabuco, under Alternative J no load will be dropped if a Category D contingency event occurs at either Trabuco or Talega").

South Orange County.[86] Further, it would be unreliable due to a single 230 kV connection and the FEIR substation design includes 13 equipment failures that would drop all South Orange County load if Talega were out of service.[87]

D. By Paralleling SDG&E's and SCE's Systems, Alternative J Will Cause Loop Flow

SDG&E and CAISO testified to, and SCE expressed concerns about, likely adverse impacts from paralleling the SDG&E's 138 kV and SCE 220 kV systems.[88] "This would have the dual negative impacts of restricting the allowable flow on the 230 kV path while subjecting the 138 kV system to network flows for which it was not designed. Restricting allowable flow on the SCE lines in South Orange County could result in limiting the transfer capability between the SDG&E and SCE systems, resulting in reduced import capability for both utilities."[89] Undisputed SDG&E power flow analyses show an SCE interconnection can cause loop flow.[90]

The PD at 45-48 dismisses SDG&E's and CAISO's testimony without factual support. SDG&E properly cited SCE's concerns expressed in SCE's RDEIR comments.[91] The PD cites Frontlines' brief to claim that SDG&E did not respond to Frontlines' claim that Trabuco transformers could be "opened up" to avoid loop flow, but the evidence cited by Frontlines does not support it.[92] Frontlines argued that the Trabuco SCE interconnection could be "disconnected" when flows on other paths reach a point where they would be restricted to avoid harm to SDG&E's SOC 138 kV system.[93] CAISO testified a manual disconnect is not feasible, an SPS cannot be used under CAISO Planning Standards, and problems would arise even if it could.[94] Intervenors submitted no power flow analyses showing system operation with a Trabuco Alternative and such a "disconnect" system in place, and thus there is no competent evidence that it is safe, effective and reliable. Of course, if Trabuco were "disconnected" from the 230 kV source, SDG&E's SOC system would return to its current state despite an over $400 million

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[86] Exh. SDG&E 4 (2nd Supp. Testimony at 33-41); Exh. SDG&E 5 (2nd Rebuttal Test. at 15, 33-34, 49).
[87] Exh. SDG&E 4 (2nd Supp. Testimony at 33:9-35:30).
[88] Exh. SDG&E 3.2 (Rebuttal Testimony at 104-05, 82-86); Exh. SDG&E 4 (2nd Supp. Test. at 42-43); Exh. SDG&E 5 (2nd Rebuttal Test. at 2-3, 13-15, 21-29); Exh. CASIO 505 (Sparks Supp. Rebuttal Test. at 4-7); FEIR, RTC, SCE Comment 336-4.
[89] Exh. SDG&E 4 (2nd Supp. Testimony at 42).
[90] E.g., Exh. SDG&E 5 (2nd Rebuttal Testimony at 24-29).
[91] FEIR, RTC, SCE Comment 336-4. Criticizing SDG&E, the PD at 45 n.94 asserts that "SDG&E both agreed to [a 40] page limit and made no effort to address this issue in its Opening Brief (which was under the agreed upon page limit)." To the contrary, SDG&E did not agree to the Reply Brief page limit and its Opening Brief was at the ALJ's 60-page limit. Tr. at 1453:22-24 (following off the record discussion, the ALJ stated his ruling on page limits and asked if the parties agreed. SDG&E's counsel stated: "Well, I would like more pages, but I understand your Honor's ruling."); SDG&E's Op. Brief at 60.
[92] Tr. at 1143:7-13 (SDG&E Smith). Frontlines served its "rebuttal testimony" the same day that SDG&E's 2nd Rebuttal Testimony was due, rather than in response to SDG&E's 2nd Supplemental Testimony, thus depriving SDG&E of the opportunity to prepare written testimony responding to Frontlines' claim.
[93] Frontlines Op. Brief at 17-21.
[94] Tr. at 333:27-340:7, 340:22-344:2 (CAISO-Sparks); *accord* Exh. SDG&E 5 (2nd Rebuttal Testimony at 10-11). Frontlines' disagreement with CAISO's interpretation of its own Planning Standards does not override CAISO's interpretation, and Frontlines concedes CAISO Planning Standards are enforceable.

investment, and Trabuco could not serve South Orange County in the event of a Talega 230 kV or 138 kV outage—thus not serving as the second source of power for over 300,000 residents and 12,000 businesses.

The PD at 46 asserts: "Notably, on further cross-examination the CAISO witness could not identify a single standard that would be violated by using SPS to open up the Trabuco transformers," citing the transcript. Neither citation supports the statement. The CAISO witness explained CAISO's SPS guidelines, the stakeholder process to develop them, that an SPS to "open up" the Trabuco transformers would violate the CAISO guidelines, and ORA's counsel declined the witness' offer to look up the specific NERC standard.[95]

The PD at 46 attacks both SDG&E's and CAISO's witnesses as purportedly evasive or obstructionist. To the contrary, these witnesses strived to respond to simplistic questions that required complex answers. In response,the ALJ admonished such witnesses not to seek clarification or re-state the question, but rather to respond "yes, no or maybe" to questions as phrased.[96] SDG&E's witnesses attempted to follow the ALJ's instructions, even though clarification of the engineering issues would have been helpful. The ALJ also expressed concern that SDG&E's engineering experts did not have immediate answers to Intervenors' questions about the impact of changes to SDG&E's system, though the ALJ seemed to understand that power flow analyses cannot be performed on the stand.[97] Avoiding speculation is not obstructionism.

VI. THE ESTIMATED COSTS OF THE SOCRE PROJECT AND ALTERNATIVE J

The Proposed Decision at 4 states that "the SOCRE Project has an estimated cost of approximately $381 million," citing "SDG&E Rebuttal Testimony at 16." The estimated cost of SDG&E's Proposed Project is $383.6 million +/- 10% (for a range of $345 million to $422 million).[98] The cited testimony does not provide any estimated cost for the Proposed Project.[99]

The PD at 42 states: "SDG&E estimates that Alternative J will cost $404- $492 million," citing "SDG&E Rebuttal Testimony at 16." The cited testimony, which was submitted before Alternative J existed, does not provide any estimated cost for Alternative J. SDG&E's estimated cost for Alternative J, modified to make it feasible, including a 138/12 kV Capistrano rebuild, but not including costs for necessary property acquisition, 138 kV

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[95] Tr. 340:22 - 343:6 (CAISO Sparks).

[96] *See, e.g.*, Tr. at 170: 25–171:7, 191:5-192:10, 333:27-334:22, 423:6-8, 601:14-20, 623:9-28, 66:2-24, 694:1-7, 740:5-740:21, 832:7-833:11, 899:4-901:1, 913:22-914:11, 923:7-19, 932:1-11, 932:27-933:4, 940:9-22, 941:26-943:8, 974:2-975:22, 1020:4-7, 1123:15-1124:14, 1162:7-26, 1168:9-28, 1172:2-1173:3.

[97] Tr. at 1304:18-1309:28. If Intervenors want to run power flow analyses on system changes, or tweaks to alternatives, they may have their witnesses do so or serve data requests on SDG&E ahead of hearings.

[98] Exh. SDG&E 2.2 (Supp. Testimony at 125, Table 1).

[99] *See* Exh. SDG&E 3.2 (Rebuttal Testimony at 16).

transmission line upgrades and SCE interconnection reliability upgrades, is $518 million to $634 million.[100]

VII. TRANSMISSION PLANNING ISSUES

A. The Mandatory NERC Reliability Standards Apply to South Orange County

Both SDG&E, the NERC-designated "Transmission Planner," and CAISO, the NERC-designated "Planning Authority," testified that SDG&E's existing South Orange County system is forecast to violate NERC and CAISO standards.[101] The PD at 23-26 discusses Frontline's claim that SDG&E's South Orange County 138 kV system is not part of the "Bulk Electrical System" under "Exclusion 3" and thus is not subject to NERC Reliability Standards. The PD ignores SDG&E's testimony that it is included by Inclusion I5 and a FERC Order makes plain Inclusion I5 overrides Exclusion E3.[102] Frontlines's interpretation, that Inclusion I5 applies to devices, but not the transmission lines that connect the devices to the rest of the 230 kV electric grid, would render Inclusion I5 pointless, contrary to statutory construction, and ignore the definition's reference to devices that "are connected at 100 kV or higher."[103]

All parties admitted that SDG&E's South Orange County 138kV transmission system is subject to CAISO control and thus is subject to the NERC reliability standards pursuant to the CAISO's Planning Standards and Transmission Control Agreement.[104] The PD should state that NERC reliability standards apply for these reasons.

B. Load Shedding After a Single Contingency Is Not Permitted

The PD, Conclusion of Law 15, correctly recognizes that NERC TPL-001-4 is the currently applicable NERC reliability standard. The PD at 27 notes that intervenors argued that "Footnote b" under the previous NERC standards allowed "load shedding" (dropping customer service) under a host of Category C contingencies, but does not discuss SDG&E and CAISO testimony, based on the NERC standards and FERC Orders, that it did not.[105]

Referring to NERC TPL-001-4, the PD at 27 asserts: "neither the CAISO nor any other party made any discernible effort to present evidence going to the effect of these new standards during hearings." This is not

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[100] Exh. SDG&E 4 (2nd Supp. Testimony at 72-73), which includes details of the cost estimate. The PD at 43 refers to Frontlines' cost estimate, but does not discuss its flaws. Among other things, Frontlines' witness has no basis to estimate a 230 kV substation cost, Tr. at 1351:16-27, includes a property acquisition cost estimate not in the record (and contrary to AT&T's $7 million figure just for relocation costs, Exh. SDG&E 5, Attachment 59), fails to include a Capistrano 138/12 kV rebuild or multiple required voltage support devices, assumes an overhead line is feasible without any evidentiary support, and relies on costs found in a WECC document that admits costs are different in California. Tr. at 993:3-24 (SDG&E-Iliev).

[101] Exh. SDG&E 1.3 (Opening Test. at 2-3, 17, 44-55, 92, 93); Exh. CAISO 502 (Sparks Test. at 2-9).

[102] Exh. SDG&E 3.2 (Rebuttal Testimony at 6-7 & fns. 12 & 13, Attachment 26); *accord* Exh. CAISO 503 (Millar Rebuttal Testimony at 2-4); *generally* SDG&E Opening Brief at 23, Reply Brief at 9 n.38.

[103] Exh. SDG&E 3.2, Attachment 26 (NERC Glossary of Terms, BES Definition at 15).

[104] Exh. SDG&E 3.2 (Rebuttal Testimony at 7-8 & fn. 14); Exh. SDG&E 2.2, Attachment 13 (CAISO Planning Standards Section II.1at 4); *accord* Exh. CAISO 503 (Millar Rebuttal Testimony at 4); Frontlines Op. Brief at 3; Tr. at 1395:28-1397:6 (ORA Mee); Tr. at 584:11-14..

[105] Exh. SDG&E 2.2 (Supp. Testimony at 46-53, Attachments 14-15); Exh. SDG&E 3.2 (Rebuttal Testimony at 9-13); SDG&E Opening Brief at 24-25; SDG&E Reply Brief at 10-11.

correct. Even though other NERC standards were in effect through January 1, 2016, SDG&E provided June 2015 testimony on NPL-001-4,[106] and CAISO did so in its October 2015 testimony.[107] Frontlines also testified regarding TPL-001-4.[108] TPL-001-4 also was discussed during evidentiary hearings and is marked as Exh. ORA 211.[109]

The PD at 27 asserts this alleged failure deprived "the Commission the opportunity to identify or consider potentially relevant factual issues (such as the existence of other now permissible ways of reducing load, and what qualifies as a "near-term planning project" within the meaning of the new NERC regulation) at hearings." To the contrary, there was no such failure, "reducing load" means dropping customers, NERC defines "Near Term Transmission Planning Horizon" as "Year One to five," and CAISO Planning Standards limit Footnote 12's use to an interim measure while a long term solution is implemented. [110] SOCRE is the long term solution.

C. A Transmission Planning Load Forecast Is Not Merely Predicting Peak Load

The PD concludes that SDG&E's load forecasts are not reliable, apparently in large part because recorded peak loads in 2014 and 2015 were less than SDG&E's load forecast for those years.[111] This comparison is a factual and legal mistake. SDG&E testified that its load forecasts are adjusted using an adverse weather factor to a "1 in 10 year" peak load.[112] This is required by the CAISO Planning Standards,[113] and the Commission has approved use of a 1 in 10 year forecast.[114] The obvious reason is that an extreme weather event can occur any year, even though unlikely every year, and the system should be planned to handle such an event.

The PD at 21 notes that SDG&E and CAISO have different load forecasts, but does not explain why. Both

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[106] Exh. SDG&E 3.2 (Rebuttal Testimony at 13-17); SDG&E Reply Brief at 11-12.
[107] Exh. SDG&E 3.2 (Rebuttal Testimony at 13-17 & Attachment 27); SDG&E Reply Brief at 11-12; Exh. CAISO 505 (Sparks Supp. Rebuttal Testimony at 4 n.3, Table 1) .
[108] Exh. Frontlines 400 (Ayer Reply Testimony at 6).
[109] *E.g.,* Tr. at 96:16 to 100:15, 235:27 to 237:7 (SDG&E Jontry); Tr. at 333:7-9, 344:18-348:8 (CAISO Sparks).
[110] Exh. SDG&E 3.2 (Rebuttal Test. at 14:27-29) & Attach. 13 (CAISO Planning Standards at 17-18).
[111] *E.g.*, PD at 18 ("Recorded peak load on the South Orange County 138-kV system has dropped each year since 2007"); *id.* at 19-22 (discussing Intervenors' claims that forecast load exceeded recorded peak loads, and concluding, "in light of questions raised about the accuracy of SDG&E's 2014 and 2015 forecasts," not to adopt SDG&E's 2015 load forecast"); *id.* at 33 ("While likely due in no small part to SDG&E's having overestimated demand for the planning period …"); Findings of Fact Nos. 16, 22 and 38.
[112] Exh. SDG&E 1.3 (Op. Testimony at 36:12-17); *see also* Tr. at 224-25 (Jontry-SDG&E).
[113] Exh. SDG&E 2.2, Attachment 13 (CAISO Planning Standards at 18) ("For studies that are addressing local load serving concerns, the studies should assume a 1 in 10-year extreme weather load level. The more stringent requirement for local areas is necessary because fewer options exist during actual operation to mitigate performance concerns. In addition, due to diversity in load, there is more certainty in a regional load forecast than in the local area load forecast. Having a more stringent standard for local areas will help minimize the potential for interruption of end-use customers.")
[114] D.14-03-004 at 24 ("the Commission approved the use of a 1-in-10 year peak weather forecast for transmission planning and local area planning"); D.13-02-015 at 39-40 ("In our RA proceedings, we use ISO forecasts with a one-in-10-year load forecast"); Decision 04-08-046 at 32 fn. 13 ("ISO's Grid Planning Standards require that transmission studies addressing local load serving concerns utilize a 1-in-10 year extreme weather load level").

CAISO and SDG&E found expected NERC violations using their different load forecasts.[115] SDG&E's load forecast is higher than CAISO's load forecast primarily because CAISO assumes future "load reductions."[116] CAISO's "1 in 10 coincident peak" load for 2025 is 506.2 MW while SDG&E's 1 in 10 non-coincident peak load for 2024 (a year earlier) is 500.2 MW. CAISO assumes "load reduction" of 52.8 MW, of which 41.78 MW is Additional Achievable Energy Efficiency (AAEE).[117] SDG&E's load forecast already accounts for "committed" energy efficiency, as it has been utilized and is assumed to continue to grow.[118] AAEE is estimated future energy efficiency savings from changes to codes and standards, and "current or soon-to-be available" technologies."[119] As SDG&E testified: "SDG&E's load modeling assumptions generally do not include AAEE when performing a load flow study for a local sub-area with a non-diverse load profile. AAEE assumptions are appropriate when discussing *aggregate* area loads, such as the aggregate load for the entire state of California, or the SDG&E service area. However, since it is not possible to predict where AAEE effects will be concentrated, it is not appropriate to assume they will be concentrated in a local area such as South Orange County."[120] The reason is that, if assumed load reductions do not appear, the system will not be designed properly to deliver reliable electric service.

The Commission sets policy and may choose to take that risk, but the PD should include SDG&E's evidence regarding the prudent load forecast and expected NERC violations using it.

D. SDG&E's and CAISO's Load Flow Modeling Establish NERC Violations

SDG&E, which has an obligation to provide reliable electric service, and CAISO, which has a legislative mandate to ensure reliable operation of the transmission grid, presented expert testimony on the issues by licensed professional electrical engineers with training and experience in their fields. SDG&E and CAISO transmission planning witnesses performed power flow analyses, a fundamental tool of transmission planning, on the existing system, the Proposed Project, and alternatives that were identified in advance of testimony being served. Their power flow analyses found expected NERC violations under all Alternatives, including Alternative J.[121]

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[115] Exh. CAISO 502 (Sparks Testimony at 3-9, 11-13, Appendix A, Tables A-2, A-3A, A-3B, B-1, B-2A, B-2B, B-3A, B-3B); Exh. CAISO 505 (Sparks Supp. Rebuttal Testimony at 3-4, Table 1).

[116] SDG&E's 2014 and 2015 load forcasts are set forth in Exh. SDG&E 2.2 (Supp Testimony at 55). CAISO's load forecasts are based on the CAISO Transmission Planning Process and are found in Exh. CAISO 505 (Sparks Supp. Rebuttal Testimony at 14, Table A-1).

[117] Exh. CAISO 505 (Sparks Supp. Rebuttal Testimony at 14, Table A-1).

[118] Exh. SDG&E 1.3 (Op. Testimony at 37:23-38:4).

[119] The Commission participated in the development of AAEE for energy load forecasts, and may take official notice of agency documents relevant to AAEE. California Energy Demand 2014–2024 Final Forecast, Vol. 1, http://www.energy.ca.gov/2013publications/CEC-200-2013-004/CEC-200-2013-004-V1-CMF.pdf, discusses the nature of AAEE starting at page 88. *See generally* SDG&E Reply Brief at 14-16.

[120] Exh. SDG&E 3.2 (Second Rebuttal Testimony at 12).

[121] *See* Footnotes 83 & 84, *supra* (Alternative J); Exh. SDG&E 3.2 (Rebuttal Testimony at 38:4 - 40:9).

By contrast, intervenors profferred various proposals without any analytical support. SJC's witness, who could have performed power flow analysis, chose not to do so, despite admitting that all major U.S. utilities and independent system operators use power flow analysis to test the performance of proposed projects.[122] Both ORA and Frontlines admit that power flow analysis is necessary to assess changes to the electric system, but neither performed any.[123] ORA's witness admitted that ORA does not have power flow software and is just learning how to operate it.[124] Frontlines' witness did not perform any power flow analysis and does not know how to do so.[125] There is no competent testimony that Alternative J will not result in NERC violations.

VIII. THE PROPOSED DECISION INCLUDES MISTAKES OF LAW

A. The CEQA Record Lacks Evidence that Alternative J is Potentially Feasible

The FEIR's Alternative J includes a new 230 kV switchyard with two transformers located on "approximately 2 acres of land, currently owned by AT&T, adjacent to the north side of the existing Trabuco Substation," and asserts it is "potentially feasible."[126] There is no substantial evidence in the CEQA record to support such a finding. Following criticism in RDEIR comments,[127] Energy Division's consultant, ZGlobal, changed the RDEIR "Conceptual Site Plan" in an February 2016 report, which revised the Trabuco Alternative to include two 230 kV transformers in a BAAH configuration. ZGlobal's Figure 1a clearly shows construction where the AT&T building is located, not just the AT&T "parking lot." [128] Yet the FEIR continues to limit Alternative J to the AT&T parking lot, use the unrevised "Conceptual Site Plan," and assess environmental impacts as if the AT&T building remains.[129] There is no supporting evidence in the CEQA record.[130]

B. The Proposed Decision Would Violate CEQA By "Piecemealing"

The Proposed Decision purports to order SDG&E to "begin to implement Alternative J" and also to conduct studies on its scope and feasiblility, and then "file an application for the two transformer addition related to Alternative J."[131] While it is not entirely clear what the PD means with respect to the "two transformer addition,"

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[122] Tr. at 466:2 – 468:9 (SJC-Shirmohammadi).
[123] Tr. at 1424:11-28, 1429:24-1430:4 (ORA-Mee); Tr. at 1353:3-21 (Frontlines-Ayer).
[124] Tr. at 1426-27, 1450,1441:15-17 (I'm thinking about this like we have this conceptual proposal") (Mee).
[125] Tr. at 133-55 (Frontlines-Ayer).
[126] FEIR, Exh. 1 (rev. DEIR at 3-16, Fig. 3-5, 3-18, 5-31).
[127] FEIR, RTC, SDG&E Comments 346-6, 347-23, 347-26 to 347-31.
[128] FEIR, App. R (ZGlobal Report at 4-5 & Fig. 1a) ("The applicant would construct a 230-kV breaker and ½ scheme switchyard to loop-in the SONGS-Santiago 230 kV transmission line and include two 230/138-kV transformers with capacity to support the SOC load. Refer to Figure 1a for the Trabuco Alternative Conceptual Site Plan.")
[129] FEIR, Exh. 1 (rev. DEIR at 3-16 to 18, Fig. 3-5);
[130] The FEIR relies on the ZGlobal Report to establish Alternative J is "potentially feasible." FEIR, RTCa at 3-27 "Appendix R includes a report prepared by ZGlobal Inc. which illustrates a potentially feasible substation design."
[131] Proposed Decision Ordering Paragraphs 2-3.

supra at 8-9, it seems to refer to SDG&E's evidence that the FEIR-allowed location is insufficient. The FEIR does not analyze the impacts of taking more land and greater construction.[132] Under CEQA, the term "project" refers to the "whole of an action" that may result in a direct or reasonably foreseeable indirect environmental impact. 14 Cal. Code Regs. § 15378(a). "Piecemeal" environmental review of a single project is prohibited to ensure that an agency does not divide a project into multiple actions, each of which individually has an insignificant environmental impact, but which collectively have a substantial impact. *See Bozung v. Local Agency Formation Comm'n* 13 Cal.3d 263, 283-84 (1975).

The California Supreme Court has established a "piecemealing test" which requires EIRs to include an analysis of the environmental effects of a future expansion or of another related action if: (1) it is a reasonably foreseeable consequence of the initial project and (2) the future expansion or related action will be significant in that it will likely change the scope or nature of the initial project or its environmental effect. *Laurel Heights Improvement Assoc. v. Regents of University of California* 47 Cal.3d 376, 396 (1988). Here, the "piecemealing" is obvious—the Proposed Decision would select Alternative J for a limited construction area and order SDG&E to then file an application to expand the construction area to make it feasible.[133]

C. The FEIR's Alternatives Analysis Does Not Comply with CEQA

The Proposed Decision's Conclusion of Law No. 4 states: "The EIR was completed in compliance with CEQA." To the contrary, the FEIR violates CEQA by ignoring environmental impacts of reasonably expected actions if certain Alternatives are chosen. The FEIR must meet CEQA's informational purpose. "When assessing the legal sufficiency of an EIR, the reviewing court focuses on adequacy, completeness and a good faith effort at full disclosure."[134]"If a final environmental impact report (EIR) does not 'adequately apprise all interested parties of the true scope of the project for intelligent weighing of the environmental consequences of the project,' informed decisionmaking cannot occur under CEQA and the final EIR is inadequate as a matter of law."[135] Under CEQA, the FEIR must include "sufficient information about each alternative to allow meaningful evaluation, analysis, and

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[132] FEIR, Exh. 1 (rev. DEIR at 5-31 to 5-34.).

[133] The FEIR also fails to evaluate 138 kV transmission line upgrades required to meet NERC and CAISO reliability standards under Alternative J, *see* Exh. SDG&E 4 (2nd Supp. Testimony at 36-37), which also constitutes piecemealing. *See San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus*, 27 Cal.App.4th 713, 732-733 (1994).

[134] *Irritated Residents v. County of Madera*, 107 Cal.App.4th 1383, 1390 (2003); *accord, e.g.* CEQA Guideline § 15151; *In re Bay-Delta Proceedings*, 43 Cal.4th 1143, 1175 (2008). *City of Santee v. County of San Diego*, 214 Cal.App.3d 1438, 1454 (1989).

[135] *CBE v. City of Richmond*, 184 Cal.App.4th 70, 82-83 (2010) (quoting *Riverwatch v. Olivenhain Municipal Water Dist.*, 170 Cal.App.4th 1186, 1201(2009)); *accord, e.g., Santiago County Water Dist. v. County of Orange*, 118 Cal.App.3d 818, 829 (1981); *Kings County Farm Bureau v. City of Hanford,* 221 Cal.App.3d 692, 712 (1990).

comparison with the proposed project," and "the significant effects of the alternative shall be discussed."[136] The FEIR repeatedly fails to do so.[137]

Most egregious is the FEIR's failure to include rebuilding the 138/12 kV Capistrano Substation under each alternative, which improperly skews the comparison of the Proposed Project's impacts with the Alternatives' impacts. SDG&E must rebuild the 60+ year old Capistrano Substation to maintain reliable electric service—mere equipment replacement is not feasible. Equipment and infrastructure is failing and predicted to fail, a more reliable bus configuration is needed, and it does not meet current reliability, seismic or security standards.[138] The only evidence in the CEQA and evidentiary record is that Capistrano will be rebuilt as a 138/12 kV substation if it is not rebuilt as a 230/138/12 kV substation under the Proposed Project.[139] No party contested this need.[140]

The FEIR's reasons for refusing to consider the environmental impacts of rebuilding the Capistrano 138/12 kV substation under the Alternatives lack any legal or factual basis. The FEIR first claims "implementation of [most Alternatives] does not require upgrades at Capistrano Substation. Therefore, the exact scope and timing of upgrades that SDG&E would decide to implement is unknown and the associated environmental impacts are therefore speculative."[141] To the contrary, the only evidence is that selection of an Alternative will require rebuilding the 138/12 kV Capistrano Substation. SDG&E informed Energy Division of the scope and timing.[142]

The FEIR next claims: "If the applicant elects to upgrade the 138-kV connections or 138/12-kV elements at the Capistrano Substation within the constraints of the activities exempted GO 131-D, it is not considered a connected action to the alternatives and does not need to be included the analysis of the alternative under CEQA."[143] CEQA requires consideration of the reasonably anticipated environmental impacts of each Alternative—it is irrelevant whether a CPUC permit is needed for such future work.

The FEIR next claims: "The need to rebuild the Capistrano Substation to address layout configuration issues or increase Capistrano's 12-kV distribution system efficiency are not objectives of the proposed project."[144]

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136 CEQA Guidelines § 15126.6(d), (e)(2), (f).
137 SDG&E informed Energy Division of these flaws in comments on the RDEIR. FEIR, Response to Comments ("RTC"), Comment 346-6, 347-7 to 347-14, 347-37 to 347-38.
138 SDG&E Opening Brief at 27-28.
139 SDG&E Opening Brief at 52-55.
140 SJC supports rebuilding Capistrano. Exh. SJC 300 (Shirmohammadi Testimony at 5:5-7, 7:9-11, 7:19-24, 13:3-11). Frontlines' "recommended alternative approach" includes "rebuild Capistrano." Exh. Frontlines 400.1C (Ayer Testimony at 20:28-32); *accord* Tr. at 1337:6-17 (Frontlines Ayer).
141 FEIR, RTC at 3-25.
142 *E.g.*, FEIR, RTC, SDG&E Comments at 98-14 to 98-24, 347-7, 347-38; SDG&E Op. Brief at 52-55.
143 FEIR, RTC, Comment 98-15.
144 FEIR, RTC, Comment 98-17.

To the contrary, SDG&E's project objectives include rebuilding Capistrano.[145] Energy Division improperly re-wrote SDG&E's project objective to exclude it.[146] Moreover, CEQA requires consideration of the reasonably anticipated environmental impacts of each Alternative—whether part of the project objectives or not.

The FEIR finally claims that "implementation of the alternatives to the proposed project would not require upgrade to the Capistrano Substation … (Appendix R)."[147] Appendix R says nothing about the condition of Capistrano or whether it must be rebuilt as a 138/12 kV substation if the Proposed Project is not approved.

The FEIR's analysis of Alternatives, including Alternative J, is required to discuss the environmental impacts of rebuilding Capistrano, but fails to do so. The FEIR's analysis of Alternative J also fails to consider and inform the Commission about the environmental impacts of the AT&T relocation,[148] 138 kV transmission line upgrades required to comply with mandatory NERC and CAISO reliability standards,[149] and likely SCE interconnection reliability upgrades.[150]

D. The FEIR Is Not Competent Evidence on Issues of Need

The Proposed Decision repeatedly relies upon the FEIR, and its "Screening Report," as substantive evidence on issues of need, including what is required to comply with NERC reliability standards.[151] This is a mistake of law. The EIR is evidence on environmental issues, not issues of need.[152] CPUC Rule 13.6(a) provides that "substantial rights of the parties shall be preserved," and the Commission long has held that such rights include the right to cross-examine opposing witnesses about proffered documents.[153] Energy Division is not a party, it

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[145] SDG&E Application, Vol. I, at 2-3 & Vol. II, PEA at 1-3, 2-6, 2-9.

[146] FEIR, Exhibit 1 (DEIR at 1-8, 1-10). SDG&E reserves its rights to challenge the FEIR's adequacy on all grounds, including those set forth in SDG&E's Opening Brief at ix-xi, 52-55.

[147] FEIR, RTC at 98-15.

[148] Under the Alternative J, AT&T would be forced to relocate and develop a new Field Operations Centre elsewhere in South Orange County. FEIR, RTC, Comment 332-3. While the exact location is unknown, it is known that developing a new AT&T facility will have construction and permanent impacts.

[149] *See* SDG&E Opening Brief at 40-50.

[150] Under FERC-approved tariffs, an SCE interconnection requires system impact studies and may require Reliability Upgrades to mitigate any impacts of such an interconnection. SDG&E and CAISO preliminary studies have identified adverse impacts, and far more detailed studies will be required. *E.g.*, SDG&E Opening Brief at 46-47, 54-55. While these projects and their impacts are uncertain at this time, the FEIR's comparison of alternatives does not inform the Commission that Alternative J may lead to such impacts.

[151] PD at 18-19, 21-22, 49 ("the CEQA review of the applicant's power flow data indicates that Alternative J would ensure that each of the potential Category C (N-1-1) contingencies identified by the applicant and the CAISO would be avoided"). Finding of Fact 11 even ignores the FEIR's revision to recognize TPL-001-4. FEIR, Exh. 1 (rev. DEIR at 3-4 n.1).

[152] March 30, 2015 Assigned Commissioner's Ruling Identifying Issues Requiring Evidentiary Hearing at 3 (identifying EIR as evidence on Issues Nos. 1-3, CEQA issues); D.16-08-017 at 13-14 n. 15 ("The EIR does not reach a conclusion as to project need and, indeed, "project need" is not a CEQA consideration.").

[153] D.99-08-016, 1999 Cal. PUC LEXIS 518 at *52 (Cal. PUC 1999) ("Without opportunity to cross-examine on the tables, District is handicapped. As Rule 64 of our Rules State, while technical rules of evidence do not apply to Commission proceedings, the substantial rights of the parties are to be preserved."); D.93-09-089, 1993 Cal. PUC LEXIS 685 at *8 (Cal.

presented no witnesses in evidentiary hearings, and SDG&E's fundamental rights would be violated if FEIR statements were admissible on issues of need without SDG&E having the chance to cross-examine (or even take discovery against) Energy Division. The FEIR is evidence of the Commission's CEQA review, but it is not evidence on whether a project is needed.[154]

E. The Proposed Decision Violates Public Utilities Code § 1005.5

Under Public Utilities Code § 1005.5(a), the Commission must determine the "maximum cost determined to be reasonable and prudent" for a project estimated to cost more than $50 million. Alternative J is estimated to cost more than $50 million. *Supra* at 17. The PD at 44 states "we lack sufficient information to assess the … likely costs" of Alternative J, which includes two transformers, and does not set a "cost cap." That is legal error.

IX. FACTUAL CORRECTIONS

- Proposed Decision at 12 states evidentiary hearings were delayed from June to November at "the request of the parties." The parties did not request the delay. Evidentiary hearings were set for July 15 and then rescheduled to July 28.[155] On July 16, 2015, the parties were informed that the hearings were suspended as Energy Division intended to recirculate the DEIR.[156]
- Proposed Decision at 12, citing SDG&E Ex. 1.1, states: "Though SDG&E provided direct written testimony on April 7, 2015, and supplemental testimony on September 7, 2015, just three days before the start of hearings, on November 6, 2015, SDG&E provided what it identified as "corrected" direct written testimony." To the contrary, based on scheduling discussions at the November 19, 2014 PHC, SDG&E served opening direct testimony on January 15, 2015, which was corrected first on April 7 and then again on September 10.[157] Following issuance of the Scoping Memo, SDG&E also filed supplemental direct testimony on April 7, which was corrected on September 10.[158] On November 5, nearly two months after SDG&E provided the corrected testimony, one business day before hearings began, and contrary to the ALJ's instruction that all pre-trial motions must be filed by November 4,[159] Frontlines filed a motion to strike SDG&E's corrected testimony.[160]

App. 1993) ("There is no indication that the letter was sent to all parties, who accordingly did not get an opportunity to cross-examine Harris on the subject matter or to formally oppose its submission. Thus, it could be said that the substantial rights of the parties within the meaning of Rule 64 were not preserved in this case."); D.88-04-068, 1988 Cal. PUC LEXIS 422 at *68 (Cal. PUC 1988) ("We do not believe that the substantial rights of CUCC to cross-examine witnesses against it would be preserved by admitting this proposed exhibit.").

[154] In that regard, it is akin to official notice under CPUC Rule 13.9. *E.g.*, D.15-06-037, 2015 Cal. PUC LEXIS 312 at *32 n.17 (Cal. PUC 2015) ("The fact that the Commission may take official notice of a document does not establish the truth of the matters stated in that document.")

[155] ALJ Farrar March 12, 2015 and June 24, 2015 emails to all parties.

[156] ALJ Farrar July 16, 2015 email to all parties.

[157] Exh. SDG&E 1.3 (Direct Testimony, cover page).

[158] Exh. SDG&E 2.2 (Supp. Testimony, cover page). Following the RDEIR and per the schedule, SDG&E served its 2nd Supplemental Testimony on September 14 and corrected it on October 27, 2015. No party challenged these corrections.

[159] ALJ Farrar October 14, 2015 email to all parties ("Parties shall submit any and all pre-trial motions on or before C.O.B. Wednesday November 4, 2015.")

[160] Motion Of Forest Residents Opposing New Transmission Lines ("Frontlines") To Strike Corrections To Portions Of San Diego Gas & Electric Company's ("SDG&E's") Prepared, Supplemental, And Rebuttal Testimony.

- Proposed Decision at 14 states: "In July 2014, the Commission's Energy Division staff issued its CEQA Alternatives Screening Report." The correct date is October 2014.[161]
- Proposed Decision at 15 states: "In February 2015, … portions of the DEIR were revised with new information." The correct date for the Recirculated DEIR is August 2015.[162]
- Proposed Decision at 17 states: "The No Project Alternative assumes no change in existing operations, i.e., it presumes SDG&E would (and could) continue to operate the existing electrical facilities and no reliability improvements would be made." To the contrary, CEQA requires an EIR to discuss "what would be reasonably expected to occur in the foreseeable future if the project were not approved."[163] Although the FEIR fails to properly analyze the environmental impacts of rebuilding the 138/12 kV Capistrano Substation, *see supra* at 21-23, the FEIR recognizes that substation and transmission line work would occur.[164]
- Proposed Decision at 20-21 states: " "In proffering its 2015 forecast, SDG&E seeks to introduce evidence that was not provided to the Commission for the CEQA analysis and that opponents to the SOCRE project lack the ability to fully analyze. This is particularly troubling, in light of SDG&E's belated corrections to its testimony, the differences found between the Commission's CEQA team's conclusions and those of SDG&E, using the same modeling software and (2014) data, and SDG&E's prior forecast having consistently overestimated demand in the area."[165] To the contrary: (a) the Commission's October 2014 Screening Report was complete before SDG&E completed its 2015 load forecast, using 2014 recorded data, on March 27, 2015[166]; and (b) SDG&E provided its 2015 load forecast in its April 7, 2015 supplemental testimony,[167] served in accordance with the schedule and on Energy Division.[168] In response to Frontlines' November 5 motion, the ALJ struck SDG&E's September 10, 2015 update of expected NERC violations based on the 2015 load forecast. The Screening Report's assertions that SDG&E could "shed load" (i.e., disconnect customers) without violating NERC standards is wrong, not in evidence (as discussed *supra*), and revised in the FEIR. As also discussed *supra*, load forecasts are adjusted to 1-in-10 year extreme weather conditions, and thus recorded peak loads in other years do not undermine load forecasts.

X. CONCLUSION

SDG&E respectfully requests that the Commission authorize SDG&E to construct the Proposed Project.

Dated in San Diego, California, this 17th day of October, 2016.

Respectfully submitted,

By: /s/ Allen K. Trial
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[161] Final Environmental Impact Report (FEIR), Appendix B, cover page.
[162] Recirculated Draft Environmental Impact Report (RDEIR), cover page.
[163] CEQA Guidelines § 15126.6(e)(2), 14 Cal. Code Regs. § 15126.6(e)(2).
[164] FEIR, Exh. 1 (rev. DEIR at 3-4 to 3-5).
[165] The Proposed Decision makes a similar statement, with the same factual errors, at 22.
[166] Tr. at 28: 5-17.
[167] Exh. SDG&E 2.0 (orig. Supp. Test. at 55); Exh. SDG&E 2.2 (ALJ-allowed Supp. Testimony at 55).
[168] ALJ Farrar March 12, 2015 email to all parties.

SUBJECT INDEX OF RECOMMENDED CHANGES

Rule 14.3(b)

1. Typographical/Factual Corrections

- As set forth in these Comments at 6, correct factual confusion in PD at 15 by either deleting discussion of RDEIR findings of "significant impact" or presenting FEIR conclusions.

- As set forth in these Comments at 8-9, correct factual errors in PD at 43, 44 Conclusion of Law 26, Ordering Paragraph 3, that suggest two transformers would be an "addition" to Alternative J rather than part of Alternative J.

- As set forth in these Comments at 12, correct factual error in PD at 42 asserting that SDG&E opposes the "Talega addition."

- As set forth in these Comments at 12-14, correct factual errors in PD at 42 asserting that SDG&E claims there is not enough space at Trabuco Substation "based on a company standard which SDG&E failed to document and itself does not appear to follow."

- As set forth in these Comments at 14, correct factual error in PD at 44 asserting that SDG&E opposed the addition of a second transformer under Alternative J.

- As set forth in these Comments at 15, correct PD at 45 to note that SDG&E cited SCE's RDEIR comments regarding Alternative J.

- As set forth in these Comments at 15 n.91, correct factual errors in PD at 45 n. 94 that "SDG&E both agreed to this page limit and made no effort to address this issue in its Opening Brief (which was under the agreed upon page limit)."

- As set forth in these Comments at 15 & n.92, correct factual errors in PD at 45-46 arising from incorporating Frontlines' claims without presenting facts.

- As set forth in these Comments at 16, correct factual errors in PD at 45-46

- As set forth in these Comments at 16-17, correct factual error in the PD at 4, 30, and Finding of Fact 6, regarding SDG&E's estimated cost of the Proposed Project.

- As set forth in these Comments at 17, correct factual error in the PD at 42 regarding SDG&E's estimated cost of Alternative J.

- As set forth in these Comments at 18, correct the factual error in the PD at 46 regarding whether CAISO's witness could identify a NERC standard regarding SPSs.

- As set forth in these Comments at 16, correct factual error in PD at 46 asserting that SDG&E's and CAISO's witnesses were evasive and obstructionist.

- As set forth in these Comments at 18, correct factual error in the PD at 27 regarding whether the parties' alleged failure to present evidence regarding NERC TPL-001-4 deprived the CPUC from considering related issues.

- Correct Finding of Fact 7 regarding year Protests were filed.

- As set forth in these Comments at 24, correct factual errors in PD at 12 regarding original scheduled date for evidentiary hearings and why hearings were continued.

- As set forth in these Comments at 24-25, correct factual errors in PD at 12 regarding when SDG&E submitted its testimony and corrections to it.

- As set forth in these Comments at 25, correct factual error in PD at 14 on Alternative Screening Report date.

- As set forth in these Comments at 25, correct factual error in PD at 15 on RDEIR date.

- As set forth in these Comments at 25, correct factual error in PD at 17 in describing FEIR No Project Alternative.

- As set forth in these Comments at 25, correct factual errors in PD at 20-21 and 22 in describing when SDG&E provided load forecasts.

2. Clarify Discussion of Reliability Concerns in South Orange County

- As set forth in these Comments at 3-5, clarify discussion in the PD at 6 by presenting SDG&E's evidence regarding reliability needs for South Orange County.

- As set forth in these Comments at 4-5 and 22, clarify discussion in the PD at 6 by stating that no party contests that the 138/12 kV Capistrano Substation must be rebuilt.

3. Clarify Discussion of Proposed Project's Significant Environmental Impacts

- As set forth in these Comments at 5-6, clarify discussion in PD at 15 regarding Proposed Project's environmental impacts.

4. Clarify Discussion of Risks to SOCRE Project

- As set forth in these Comments at 6-7, clarify discussion in the PD at 31-33 and Finding of Fact 40 to "outage risks" by discussing SDG&E's evidence.

5. Clarify FEIR Alternative J

- As set forth in these Comments at 8-9, correct factual errors in PD at 43, 44 Conclusion of Law 26, and Ordering Paragraph 3 that suggest two transformers would be an "addition" to Alternative J rather than part of Alternative J.

6. Clarify Discussion of Alternative J

- As set forth in these Comments at 7-8, clarify discussion in the PD at 38-42 of Alternative J's feasibility by discussing SDG&E's evidence.

- As set forth in these Comments at 9-14, in the PD at 42 discuss SDG&E's evidence that a safe and reliable 230 kV switchyard cannot be constructed in the space allowed by Alternative J.

- As set forth in these Comments at 10 and 20, in the PD at 42 note that FEIR, Appendix R, ZGlobal February 2016 Memo at 4-5 and Figure 1a indicates that a Trabuco 230 kV switchyard with two transformers in a BAAH configuration requires demolition of the AT&T building.

- As set forth in these Comments at 10, in the PD at 42 note that no party testified that Alternative J's design meets the Commission's safety and reliability standards.

- As set forth in these Comments at 10-12, in the PD at 42 discuss the absence of intervenor evidence that a safe and reliable 230 kV switchyard can be constructed in the space allowed by Alternative J.

- As set forth in these Comments at 12-14, correct factual errors in PD at 42 asserting that SDG&E claims there is not enough space at Trabuco Substation "based on a company standard which SDG&E failed to document and itself does not appear to follow."

- As set forth in these Comments at 14, correct factual error in PD at 44 asserting that SDG&E opposed the addition of a second transformer under Alternative J.

- As set forth in these Comments at 14, correct discussion in PD at 49 and Finding of Fact 51 to include SDG&E and CAISO evidence that Alternative J will result in NERC violations.

- As set forth in these Comments at 15, correct statement in PD at Finding of Fact 55 that Alternative J can serve SOC if Talega is lost.

- As set forth in these Comments at 15, discuss in PD at 42 SDG&E evidence that Alternative J's substation and transmission design is unreliable.

- As set forth in these Comments at 15, in the PD at 42 discuss SDG&E's evidence that Alternative J would require upgrades to SDG&E's 138 kV system.

- As set forth in these Comments at 15, clarify discussion in the PD at 45-48 to include SDG&E's and CAISO's evidence that the SCE connection will create loop flow and its consequences.

- As set forth in these Comments at 15-16, in the PD at 45-48 include SDG&E's and CAISO's evidence rebutting Frontlines' claim that Trabuco can be "opened up" to avoid loop flow.

- As set forth in these Comments at 3, 7 and 8, in the PD at 44 present SDG&E's evidence that an SCE interconnection under Alternative J will require years of system impact studies and potential reliability upgrades.

7. Clarify Discussion of Alternative J Cost

- As set forth in these Comments at 17, correct factual error in the PD at 42 regarding SDG&E's estimated cost of Alternative J.

- As set forth in these Comments at 17 & n. 100, in the PD at 43 present SDG&E's evidence regarding Frontlines' cost estimate for Alternative J.

8. Clarify Discussion of Transmission Planning Issues

- As set forth in these Comments at 17, in the PD at 23-26 present SDG&E's and CAISO's evidence that SDG&E's SOC 138 kV system is part of the NERC-defined Bulk Electrical System.

- As set forth in these Comments at 18, in the PD at 27 present SDG&E's and CAISO's evidence responding to intervenors' claim that "footnote b" of superceded NERC standards permitted load drop in South Orange County.

- As set forth in these Comments at 18, correct the factual error in the PD at 27 regarding whether SDG&E and CAISO presented evidence regarding NERC TPL-001-4.

- As set forth in these Comments at 18, correct factual error in the PD at 27 regarding whether the parties' alleged failure to present evidence regarding NERC TPL-001-4 deprived the CPUC from considering related issues.

- As set forth in these Comments at 18, in the PD at 28, 29, 35, 36, 49, Finding of Fact 29, and Conclusion of Law 17, clarify that NERC TPL-001-4, Footnote 12, does not permit 75 MW of load shed in South Orange County in the long term transmission planning horizon that is applicable to the SOCRE Project.

- As set forth in these Comments at 18-19, in the PD at 18, 19-22, 33, and Findings of Fact 16, 22 and 38, discuss that transmission planning load forecasts are not intended to predict actual load in any year, but are required to be adjusted to a 1 in 10 year adverse weather event under CAISO Planning Standards and prior CPUC Decisions.

- As set forth in these Comments at 19, in the PD at 21, present SDG&E's evidence regarding CAISO's and SDG&E's differing load forecast assumptions.

- As set forth in these Comments at 20, in the PD at 38 discuss that load flow modeling is a fundamental transmission planning tool to ensure system reliability.

- As set forth in these Comments at 20, in the PD at 38 discuss fact that Intervenors did not perform any load flow analyses.

9. Correct Legal Errors

- As set forth in these Comments at 18, in the PD at 28, 29, 35, 36, 49, Finding of Fact 29, and Conclusion of Law 17, clarify that NERC TPL-001-4, Footnote 12, does not permit 75 MW of load shed in South Orange County in the long term transmission planning horizon that is applicable to the SOCRE Project.

- As set forth in these Comments at 20, revise PD at 16 and Conclusion of Law 3 to state that there is no substantial evidence in the CEQA record that Alternative J is potentially feasible because the FEIR, Appendix R, ZGlobal February 2016 Memo at 4-5 and Figure 1a indicates that a Trabuco 230 kV switchyard with two transformers in a BAAH configuration requires demolition of the AT&T building.

- As set forth in these Comments at 21, the PD at 2, 44, Conclusion of Law 26 and Ordering Paragraph 3 should be revised to avoid piecemealing in violation of CEQA.

- As set forth in these Comments at 21-22, the PD at 16 and Conclusion of Law 4 should be revised to find that the FEIR failed to evaluate the environmental impacts of reasonably anticipated actions under Alternative J in violation of CEQA.

- As set forth in these Comments at 23-24, the PD at 18-19, 21-22, 49, Finding of Fact 11, 16-19 and 51 should be revised because the FEIR and other CEQA documents are not admissible evidence on issues of need.

- As set forth in these Comments at 24, the PD at 44 violates Public Utilities Code § 1005.5(a).

APPENDIX OF SDG&E PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW
(Additions to Proposed Decision Text Shown Underlined and Deletions shown in Strikeout)

Findings of Fact

1. The SDG&E South Orange County service area is located at the northern end of SDG&E's service territory ~~and has more than 129,000 electric customers~~. SDG&E serves over 300,000 people (112,794 residential electric meters) and about 12,000 businesses (large commercial and industrial) in rapidly growing areas of South Orange County.

2. The South Orange County service area represents approximately 10% of SDG&E's total customer load.

3. In its 2010 - 2011 transmission planning process the CAISO identified a reliability need in the South Orange County area.

4. In accordance with the applicable CAISO tariff, SDG&E submitted a potential solution to the CAISO's reliability concern during the 2010 Request Window.

5. On May 18, 2012 SDG&E filed its Application for a CPCN for the SOCRE Project.

6. As proposed, the SOCRE Project has an estimated cost of approximately ~~$381 million~~ $383.6 million +/- 10% (for a range of $345 million to $422 million).

7. Protests to SDG&E's Application were filed on June 20, 21, and 22, 2015 by ORA, SJC, and FRONTLINES, respectively.

8. In ~~July~~ October 2014, the Commission's Energy Division staff issued its California Environmental Quality Act Alternatives Screening Report.

9. The alternatives screening process identified and reviewed the following 11 potential alternatives to the SOCRE Project:

a. Alternative A – No Project.
b. Alternative B1 – Reconductor Laguna Niguel–Talega 138-kV Line
c. Alternative B2 – Use of Existing Transmission Lines (Additional Talega–Capistrano 138-kV Line).
d. Alternative B3 – Phased Construction of Alternatives B1 and B2.
e. Alternative B4 – Rebuild South Orange County 138-kV System.
f. Alternative C1 – SCE 230-kV Loop-in to Capistrano Substation.
g. Alternative C2 – SCE 230-kV Loop-in to Capistrano Substation Routing.
h. Alternative D – SCE 230-kV Loop In to Reduced-Footprint Substation at Landfill.
i. Alternative E – New 230-kV Talega–Capistrano Line Operated at 138 kV.
j. Alternative F – 230-kV Rancho Mission Viejo Substation.
k. Alternative G – New 138-kV San Luis Rey–San Mateo Line and San Luis Rey Substation Expansion.

10. In February 2015, Energy Division issued a Draft Environmental Impact Report ("DEIR") on the SOCRE Project. Following public comment, Energy Division issued a Recirculated Draft Environmental Impact Report ("RDEIR") in August 2015, which, among other revisions, added an "Alternative J-SCE 230 kV Loop In to Trabuco Substation." Following public comment, on April 25, 2016 the final EIR issued.

~~11. All the Alternatives identified in the EIR would meet project Objectives 1 and 2 as defined in Section 1.3.1 of the EIR, and ensure each of the potential Category C (N-1-1) contingencies identified by the applicant and CAISO would be avoided through the 10-year planning horizon.~~

~~12. EIR Alternatives A, B.1, B.2, B.3, and B.4 would not redistribute the power flow of the applicant's South Orange County 138-kV system as required by EIR Objective 3.~~

11~~13~~. The EIR identifies the significant adverse impacts of the SOCRE Project, as well as a reasonable range of alternatives to a proposed project that are potentially feasible ~~feasibly~~ and would attain most of the basic project objectives but avoids or substantially lessens any of the significant effects of the project.

~~14. Comments on the Recirculated DEIR were received over a 45-day period starting August 10, 2015, and ending September 24, 2015.~~

12. With SDG&E's existing South Orange County ("SOC") system, Talega Substation provides essentially all power to SDG&E's SOC 138 kV network and loss of Talega's 230 kV or 138 kV service would interrupt electrical service to over 300,000 SOC residents and over 12,000 businesses, causing significant economic, safety and public welfare impacts.

13. Without a project, SDG&E's existing SOC system is predicted to violate mandatory NERC reliability criteria and CAISO planning standards no later than 2020 and as early as 2015. Without a project, some or all of South Orange County would lose electric service after a single equipment failure under many NERC Category C events, after two equipment failures under NERC Category C events, or equipment failures during Talega and other SOC substation maintenance events.

14. SDG&E's Capistrano Substation, built in 1954, must be rebuilt to provide reliable electric service. Among other things, it must be rebuilt to upgrade its current bus configuration to a more reliable configuration, replace deteriorating infrastructure and equipment near the end of its useful life, meet current seismic, safety and security standards, and allow 12 kV ties with neighboring substations that increase the reliability of the overall system.

~~15. SDG&E originally claimed that its 2014 forecast showed South Orange County load reaching 490 MW beyond 2023.~~

15~~16~~. Recorded peak load on the South Orange County 138-kV system ~~has dropped each year since 2007~~increased from 2002 to a high of 477 megawatts ("MW") in 2007, dropped to a low of 403 MW in 2009 during the recent recession, and increased to 415 MW in 2014 and 2015.

16. CAISO Planning Standards provide: "For studies that are addressing local load serving concerns, the studies should assume a 1 in 10-year extreme weather load level. The more stringent requirement for local areas is necessary because fewer options exist during actual operation to mitigate performance concerns. In addition, due to diversity in load, there is more certainty in a regional load forecast than in the local area load forecast. Having a more stringent standard for local areas will help minimize the potential for interruption of end-use customers."

17. SDG&E's 2014 non-coincident load forecast, adjusted to a 1 in 10 year adverse weather event, forecast a peak South Orange County load of 481.1 in 2023. SDG&E's 2015 non-coincident load forecast, adjusted to a 1 in 10 year adverse weather event, forecast a peak South Orange County load of 500.2 in 2024.

18. CAISO's "1 in 10 coincident peak" load for 2025 is 506.2 MW while SDG&E's 1 in 10 non-coincident peak load for 2024 (a year earlier) is 500.2 MW. CAISO assumes "load reduction" of 52.8 MW, of which 41.78 MW is Additional Achievable Energy Efficiency (AAEE). The CAISO now predicts a 446 MW peak load in 2024 and a 453 MW peak load in 2025.

19. SDG&E does not adjust its distribution load forecasts for AAEE on the ground that, because it is not possible to predict where AAEE effects will be concentrated, it is not appropriate to assume they will be concentrated in a local area such as South Orange County.

20. CAISO performed power flow analyses using its load forecast, which found expected violations of mandatory NERC reliability standards within the 10-year planning period.

21. SDG&E performed power flow analyses using its load forecast, which found expected violations of mandatory NERC reliability standards within the 10-year planning period.

22. Under certain system conditions, SDG&E's transmission system in South Orange County can support 410 MW of load without violating the Applicable Rating of a transmission element in the event of a NERC Category B or C contingency.

~~17. The existing system is capable of handling 400 to 499 MW of power during normal conditions and 500 MW or more during temporary peak load conditions.~~

~~18. The rated capacity of the 138-kV system is approximately 580 MW.~~

~~19. The applicant's current power flow data do not indicate that system loads may exceed 500 MW until after 2024.~~

~~20. The applicant does not forecast that any of the 138/12 kV substations within its South Orange County 138 kV system would exceed their operating capacity through 2024.~~

~~21. The peak load assumption upon which the CAISO approved the SOCRE Project in 2011 which assumed a 2020 Peak load of 525 MW, is unrealistic.~~

~~22. The 2015 Peak load in South Orange County was actually only 415 MW.~~

~~23. The CAISO updated its Net Peak Load forecast for South Orange County since approving the SOCRE Project in 2011.~~

~~24. The CAISO now predicts a 446 MW peak load in 2024 and a 453 MW peak load in 2025.~~

~~25. SDG&E's January 2015 load forecast assumed a 2023 peak South Orange County load of 481 MW which is higher than the CAISO's most recent forecast.~~

~~26. SDG&E's January 2015 forecast was revised upward to project a 3% higher 2023 peak South Orange County load of 494 MW, while the CAISO forecast was revised downward.~~

~~27. SDG&E's January 2015 forecast is unreliable.~~

23~~28~~. The South Orange County 138 kV facilities are under CAISO operational control.

24. From when CAISO approved the SOCRE Project and through December 31, 2015, applicable NERC transmission planning standards were TPL-001-0.1, TPL-002-0b, TPL-003-0b, and TPL-004-0a. As of January 1, 2016, the applicable NERC transmission planning standard is TPL-001-4. Category A, B and C contingencies under the old standards have been renamed as Category P0 to P7 contingencies.

25. NERC TPL-001-4 includes Footnote 12, which provides: "An objective of the planning process is to minimize the likelihood and magnitude of Non-Consequential Load Loss following planning events. In limited circumstances, Non-Consequential Load Loss may be needed throughout the planning horizon to ensure that BES performance requirements are met. However, when Non-Consequential Load Loss is utilized under footnote 12 within the Near-Term Transmission Planning Horizon to address BES performance requirements, such interruption is limited to circumstances where the Non-Consequential Load Loss meets the conditions shown in Attachment 1. In no case can the planned Non-Consequential Load Loss under footnote 12 exceed 75 MW for US registered entities. The amount of planned Non-Consequential Load Loss for a non-US Registered Entity should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction."

26. Under the conditions set forth in Attachment 1 to NPL-001-4, Footnote 12 allows SDG&E to use Non-Consequential Load Loss in the Near-Term Transmission Planning Horizon as part of a Corrective Action Plan to remove overloads caused by a P1 (Category B) Contingency. It does not extend to the Long Term Transmission Planning Horizon. Under the NERC Glossary of Terms, "Near-Term Transmission Planning Horizon" is defined as "The transmission planning period that covers Year One through five."

27. Both the CPUC and CAISO use a 10-year planning horizon for new transmission projects.

28. CAISO Planning Standards provide: "Footnote 12 of TPL-001-4 Interpretation and Applicable Timeline: The shedding of Non-Consequential load following P1, P2-1 and P3 contingencies on the Bulk Electric System of the ISO Controlled Grid is not considered appropriate in meeting the performance requirements. In the near-term planning horizon, the requirements of Footnote 12 may be applied until the long-term mitigation plans are in-service. In the near-term transmission planning horizon, the non-consequential load loss will be limited to 75 MW and has to meet the conditions specified in Attachment 1 of TPL-001-4.

29. The Application for the SOCRE Project was filed in May 2012, and is not limited to the Near Term Planning Horizon. Footnote 12 does not permit Non-Consequential Load Loss in SDG&E's South Orange County system.

30. The SOCRE Project rebuilds the aging Capistrano Substation as a 230/138/12 kV substation on existing SDG&E substation property and constructs a new double circuit 230 kV transmission line by replacing existing facilities and using existing rights of way.

31. Because Capistrano Substation is adjacent to the electrical load center for South Orange County, adding a second 230 kV source there avoids the need for additional work to upgrade SDG&E's 138 kV network to solve NERC violations and load shedding risks, and provides resiliency to South Orange County.

32. SDG&E's SOCRE Project will allow SDG&E to mitigate the expected NERC violations in its South Orange County system.

33. By adding a 230 kV connection to a rebuilt Capistrano Substation, SDG&E's SoCRE Project provides a redundant second 230 kV source that would provide South Orange County residents and businesses with the same level of reliability and resiliency as the remainder of SDG&E's system.

34. SDG&E's SOCRE Project would rebuild SDG&E's existing 138/12 kV Capistrano Substation, built over 60 years ago, to replace failing equipment and infrastructure, install a more reliable bus configuration, meet current seismic, safety and security standards, and expand capacity.

35. With the existing system, many events will interrupt customer service in South Orange County, including: 29 scenarios of a forced outage of one piece of transmission equipment during routine planned maintenance events at Talega Substation, which would drop all customers; 28 such scenarios that would force SDG&E to shed significant portions of its SOC customers; 80 such scenarios at other South Orange County substations that would drop 31% to 71% of SOC customers; 18 NERC Category C violations that would require SDG&E to drop customers after one outage; and 14 Category C "load shedding" scenarios that would require SDG&E to drop customers after two outages. SDG&E's SOCRE Project would mitigate these risks.

36. Under the SOCRE Project, the 230 kV lines serving Capistrano Substation would be on steel poles. SDG&E has never experienced the loss of a transmission steel pole or lattice tower due to any kind of fire.

37. SDG&E avoids installing transmission structures on seismic faults and transmission structures are designed to withstand forces greater than earthquake shaking.

38. The FEIR found only two significant adverse environmental effects of the SOCRE Project: a temporary increase in air emissions during construction work at Capistrano Substation, which in total would be less than one percent of the total SCAQMD daily emissions inventory; and the demolition of an old utility structure on the Capistrano Substation property that might be, but currently is not, found eligible for listing on the National Register of Historic Places.

39. SDG&E's SOCRE Project is designed in compliance with the Commission's policies governing the mitigation of EMF effects using low-cost and no-cost measures.

40. SDG&E's SOCRE Project is designed in accordance with Commission rules and regulations and other applicable standards governing safe and reliable operations.

~~29. The NERC TPL-001-4 limitation of load loss to a maximum of 75 MW only has a significant impact on project alternatives that risk a significant (>75 MW) loss of load under a single contingency.~~

~~30. While the SOCRE Project might mitigate outage risks to the entire South Orange County posed by the maintenance scenarios posited by SDG&E, it does not and cannot prevent all possible outages.~~

~~31. There are outage risks to the South Orange County area that SDG&E has failed to identify that are better addressed by project alternatives other than the SOCRE Project.~~

41~~32~~. The No Project Alternative does not satisfy the new NERC reliability standards, would not provide a second 230 kV source for South Orange County, would not address identified risks during maintenance outages, would not avoid load shedding during many NERC contingency events, and would not rebuild Capistrano Substation.

42. If the No Project Alternative were selected, the reasonably anticipated actions would include SDG&E rebuilding the 138/12 kV Capistrano Substation, replacing two 230 kV transformers at Talega Substation, and undertaking 138 kV transmission line upgrades to ensure compliance with NERC reliability standards as well as more stringent CAISO standards.

4333. Alternatives A, B.1, B.2, B.3, and B.4 would not redistribute the power flow of the applicant's South Orange County 138-kV system.

44. Alternatives B.1, B.2, B.3 and B.4 Alternatives B.1, B.2, B.3 and B.4 Alternatives B.1, B.2, B.3 and B.4 do not satisfy the NERC reliability standards, would not provide a second 230 kV source for South Orange County, would not address identified risks during maintenance outages, would not avoid load shedding during many NERC contingency events, and would not rebuild Capistrano Substation.

45. Alternatives C1, C2 and D, which interconnect SDG&E's 138 kV SOC system with SCE's 230 kV system. Under SCE's Transmission Owner's Tariff and the CAISO Tariff, such an interconnection will undergo years of system impact studies and a determination of "Reliability Upgrades" necessary to avoid adverse impacts to the electric grid. Screening studies have identified loop flow issues, which would require further upgrades to SDG&E's SOC system or limiting flows on major WECC paths.

~~34. The No Project Alternative represents the status quo and, consequently, would result in no environmental impacts over existing baseline conditions.~~

~~35. The final EIR identifies the environmentally superior alternative other than the No Project Alternative as Alternative J.~~

~~36. All power flow inputs and load forecast data used in the Screening Report analysis were provided by SDG&E.~~

~~37. The projected load growth which was initially driving the SOCRE Project has not materialized and is not anticipated to materialize in the relevant planning horizon.~~

~~38. SDG&E's 2014 need forecast is excessive and inaccurate.~~

~~39. The SOCRE Project will mitigate outage risks to the entire South Orange County posed by the maintenance scenarios posited by SDG&E.~~

~~40. There are outage risks which SDG&E failed to identify that are better addressed by project alternatives other than the SOCRE Project.~~

~~41. It is difficult, if not impossible, to absolutely avoid loop flow issues when there are multiple power sources to a local area.~~

4642. The No Project alternative carries the risk of a significant (>75 MW) loss of load under a single contingency.

4743. Alternatives B.1, B.2, B.3 and B.4 carry the risk of a significant (>75 MW) loss of load under a single contingency.

4844. Alternatives C.1, C.2, and D carry the risk of a significant (>75 MW) loss of load under a single contingency.

4945. No party specifically supports option E.

50. FEIR Alternative F would expand SDG&E's existing 138/12 kV Rancho Mission Viejo ("RMV") Substation to a 230/138/12 kV substation, and construct a new, double circuit 230 kV Talega-RMV transmission line. One circuit would be energized at 230 kV and one at 138 kV.

51. A 230/138/12 kV substation that is safe, reliable and conforms to industry standards and the law cannot be constructed at SDG&E's existing RMV Substation. Any expansion would be difficult and costly because of topography and adjacent water and sewer mains. SJC's witness deferred to SDG&E's substation engineer on the feasibility of safe and reliable 230/138/12 kV substation that complies with state water quality regulation.

52. FEIR Alternative F, by supplying power to RMV Substation through Talega Substation, would still have a single point of failure and thus not provide redundancy to SDG&E's South Orange County system.

53. SJC proposed a revision to Alternative F to have the 138 kV line bypass Talega Substation and remove the common point of failure. SJC's revision was not adopted in the FEIR. SDG&E's power flow analysis shows that even with SJC's proposed revision, Alternative F would not mitigate all NERC Category C violations, Category C load shedding or forced outages during maintenance events. SJC's witness did not perform any power flow analysis.

54. Alternative F would not rebuild the 138/12 kV Capistrano Substation. SJC agrees that the 138/12 kV Capistrano Substation should be rebuilt. If Alternative F were chosen, it is reasonably anticipated that SDG&E would rebuild the 138/12 kV Capistrano Substation.

5546. To meet NERC and CAISO planning standards, in addition to the Alternative F improvements, Alternative F would need to be modified to upgrade the 138 kV line between Talega and Laguna Niguel.

5647. To meet NERC and CAISO transmission planning standards, Alternative G would need to have the 138 kV lines between Talega and Laguna Niguel and between Talega and Pico upgraded.

5735. The final EIR identifies the environmentally superior alternative other than the No Project Alternative as Alternative J.

58. FEIR Alternative J would expand SDG&E's existing 138/12-kV Trabuco Substation in Laguna Niguel into a 230/138/12-kV substation. SDG&E would construct a 230-kV switchyard, including two, parallel 230-kV/138-kV transformers, each with a capacity of 392 MVA. SDG&E would acquire "approximately 2 acres of land, currently owned by AT&T, adjacent to the north side of the existing Trabuco Substation for the construction and operation of the 230-kV switchyard." The 230-kV/138-kV transformers would be open air insulated. An approximately 3200 square foot, 20-foot high control building would be constructed on the expanded lot."

59. FEIR Alternative J includes a "Trabuco Substation Conceptual Site Plan" prepared by ZGlobal that shows a 230 kV switchyard located on the adjacent AT&T "parking lot." This "Trabuco Substation Conceptual Site Plan" does not show a breaker and a half ("BAAH") configuration or an water retention facilities.

60. In response to SDG&E comments on the feasibility of the substation design, the FEIR Response to Comments, RTCa at 3-27, states: "Appendix R includes a report prepared by ZGlobal Inc. which illustrates a potentially feasible substation design." The February 2016 ZGlobal Report states: "The applicant would

construct a 230-kV breaker and ½ scheme switchyard to loop-in the SONGS-Santiago 230 kV transmission line and include two 230/138-kV transformers with capacity to support the SOC load. Refer to Figure 1a for the Trabuco Alternative Conceptual Site Plan. This plan does not depict a full breaker and ½ bus scheme, however, it does provide the conceptual view of integrating a 230 kV bus and breaker yard as an extension to the existing Trabuco substation."

61. ZGlobal changed the FEIR "Conceptual Site Plan" in its February 2016 report to include two 230 kV transformers in a BAAH configuration and expand the area of construction to include where the AT&T building is located, not just the AT&T parking lot. The FEIR, however, continues to limit Alternative J to the AT&T parking lot, use the unrevised "Conceptual Site Plan, and assess environmental impacts as if the AT&T building remains.

62. A safe and reliable 230 kV substation, compliant with state water quality regulations and meeting industry standards, cannot be constructed on the AT&T "parking lot" as set forth by Alternative J. No party testified that the Alternative J design in the Conceptual Site Plan was safe and reliable. SJC's witness and ORA's witness deferred to SDG&E's substation engineers for proper substation design. Frontlines' witness was not an electrical engineer and had no experience in substation design.

63. The FEIR did not analyze the environmental impacts of expanding the Trabuco Substation beyond the AT&T parking lot.

64. FEIR Alternative F would connect a new 230 kV switchyard to SDG&E's existing 138 kV equipment. The FEIR did not analyze the environmental impacts of converting SDG&E's existing 138 kV switchyard to a reliable BAAH configuration.

65. If a 230 kV switchyard could be constructed adjacent to the existing Trabuco Substation, (a) it would not be able to serve peak SOC load in the event of a Talega Substation outage due to limitations on transmission line ratings, (b) would result in NERC violations when there are high flows on the transmission lines constituting Path 43 when SOC load is above 450 MW, (c) would require 138 kV transmission line upgrades to mitigate NERC violations, and (d) require a dynamic voltage control device to prevent MVar flows from the SOC 138 kV system and SCE's 230 kV system.

66. Alternative J requires an interconnection between SDG&E's SOC 138 kV system and SCE's 230 kV system, which would parallel a robust 230 kV path with a relatively weak 138 kV network. This would restrict the allowable flow on the 230 kV path while subjecting the 138 kV system to network flows for which it was not designed. Restricting allowable flow on the SCE lines in South Orange County could result in limiting the transfer capability between the SDG&E and SCE systems, resulting in reduced import capability for both utilities.

67. Under SCE's Transmission Owner's Tariff and the CAISO Tariff, Alternative J's SCE interconnection will undergo years of system impact studies and a determination of "Reliability Upgrades" necessary to avoid adverse impacts to the electric grid. Screening studies have identified loop flow issues, which would require further upgrades to SDG&E's SOC system or limiting flows on major WECC paths.

68. Alternative J would not rebuild the 138/12 kV Capistrano Substation. If Alternative J were chosen, it is reasonably anticipated that SDG&E would rebuild the 138/12 kV Capistrano Substation.

69. The FEIR did not evaluate the environmental impacts of rebuilding the 138/12 kV Capistrano Substation under Alternative J. The FEIR did not evaluate the environmental impacts of 138 kV

transmission line upgrades necessary under Alternative J to mitigate NERC violations. The FEIR did not evaluate the environmental impacts of relocating the AT&T Service Center under Alternative J.

70. SCE and AT&T oppose Alternative J.

~~48. In addition to a 10% error range, SDG&E factored in a 30% contingency in estimating most of the Alternative J costs.~~

~~49. A potentially significant element of the costs of Alternative J is the addition of a second 230/138 transformer at Trabuco Substation.~~

~~50. Alternative J has fewer adverse environmental impacts than the SOCRE Project or any of the project alternatives.~~

~~51. Alternative J ensures that each of the potential Category C (N-1-1) contingencies identified by SDG&E and the CAISO would be avoided through the 10-year planning horizon (consistent with Objective 1),~~

~~52. Alternative J allows for the equipment at Capistrano Substation found to be antiquated or inadequate to be replaced (consistent with Objective 2).~~

~~53. Alternative J allows for power flow within the applicant's South Orange County 138 kV system to be redistributed (consistent with Objective 3).~~

~~54. Alternative J does not carry the risk of a significant (>75 MW) loss of load under a single contingency.~~

~~55. With changes at Talega and the installation of two transformers at Trabuco, under Alternative J no load will be dropped if a Category D contingency event occurs at either Trabuco or Talega.~~

~~56. The changes at Talega and the installation of two transformers at Trabuco afford Alternative J a level of reliability unmatched by the SOCRE Project or any other project alternative.~~

~~57. Alternative J will enhance the safety and reliability of service to the South Orange County service area.~~

Conclusions of Law

1. Public convenience and necessity requires a transmission project to address the following reliability concerns in SDG&E's South Orange County ("SOC") system: (a) Talega Substation provides essentially all power to SDG&E's SOC 138 kV network and loss of Talega's 230 kV or 138 kV service would interrupt electrical service to over 300,000 SOC residents and over 12,000 businesses, causing significant economic, safety and public welfare impacts; (b) absent a project, SDG&E's system will violate mandatory NERC reliability criteria and CAISO planning standards; (c) absent a project, some or all of South Orange County would lose electric service after a single equipment failure under many NERC Category C events, after two equipment failures under NERC Category C events, or equipment failures during Talega and other SOC substation maintenance events, and (d) SDG&E's over 60-year old Capistrano Substation must be rebuilt to provide reliable electric service.

2. SDG&E's SOCRE Project would mitigate each of the identified reliability concerns in South Orange County, and therefore serves the public convenience and necessity.

3.~~6~~. The CPUC is the Lead Agency as defined by CEQA.

4. ~~7~~. The CPUC prepared a DEIR for the SOCRE Project and circulated the DEIR for public comment for a 45-day period (beginning February 23, 2015, and ending April 10, 2015) as required by CEQA.

5~~1~~. Portions of the DEIR were revised with new information, and the revised chapters and sections were recirculated in a manner consistent with the provisions of Section 15088.5 of the CEQA Guidelines. The Recirculated DEIR was circulated for public comment for a 45-day period starting August 10, 2015, and ending September 24, 2015.

6. The CPUC issued a Final Environmental Impact Report (FEIR) on April 25, 2016.

7~~2~~. The EIR examines the environmental impacts of the proposed project and a reasonable range ~~number~~ of potentially feasible alternatives, including the No Project Alternative. With the modifications noted below; it identifies their significant and unavoidable environmental impacts and the mitigation measures that will avoid or substantially lessen them, where possible, and identifies the environmentally superior alternative as required by CEQA.

8~~3~~. Except as noted below, s~~S~~ubstantial evidence supports the EIR findings.

9~~4~~. The EIR was completed in compliance with CEQA.

~~5. The EIR identifies the significant adverse impacts of the proposed project, as well as a reasonable range of alternatives that feasibly attains most of the basic project objectives but avoids or substantially lessens any of the significant effects of the project.~~

~~6. The CPUC is the Lead Agency as defined by CEQA.~~

~~7. The CPUC prepared a DEIR for the SOCRE Project and circulated the DEIR for public comment for a 45-day period (beginning February 23, 2015, and ending April 10, 2015) as required by CEQA.~~

10~~8~~. The FEIR finds t~~T~~he environmentally superior alternative is the No Project Alternative.

11~~9~~. The FEIR identifies Alternative J as the environmentally superior alternative other than the No Project Alternative.

12~~10~~. We have reviewed and considered the information contained in the final EIR.

13. The FEIR finds the SOCRE Project has two "significant and unavoidable adverse environmental impacts. First, the SOCRE Project's air emissions during construction will exceed the South Coast Air Quality Management District (SCAQMD) "significance threshholds." All Alternatives, including Alternative J, have a similar impact. We find that it is reasonably anticipated that the 138/12 kV Capistrano Substation will be rebuilt under all Alternatives, and that the FEIR understates the air emissions under all Alternatives that do not include such work by not including this reasonably anticipated action. Capistrano Substation must be rebuilt to provide reliable electric service. It is not prudent to wait to replace equipment only after it has failed and interrupted customer service.

14. The FEIR also finds that the SOCRE Project would have a significant impact on an historic resource, i.e., an old utility structure on the Capistrano Substation property, if it is found eligible for the National Register of Historic Places (NRHP). As the FEIR shows, the Keeper of the NRHP declined to find the structure eligible for the NRHP on September 22, 2015. A year has passed and no evidence was presented of a further application to the Keeper or that such an application would be successful. We

therefore modify the FEIR to find that the SOCRE Project does not have a significant impact to a historical resource.

1511. The final EIR, as modified, reflects the independent judgment of the Commission.

1612. The applicant for a CPCN has the burden of affirmatively establishing the reasonableness of all aspects of its application.

~~13. Intervenors do not have the burden of proving the unreasonableness of the applicant's showing.~~

~~14. SDG&E's 2015 need forecast should not be adopted at this time.~~

1715. As of January 1, 2016, NERC TPL-001-4 is the enforceable, governing standard for transmission system planning performance requirements.

1816. NERC TPL-001-4 does not allow non- consequential load loss after a single contingency event in the long-term transmission planning horizon.

1917. The SOCRE Project is addresses concerns for the long-term planning horizon.~~NERC TPL-001-4 limits load-drop under single contingencies to 75 MW.~~

2018. Pub. Util. Code § 1001 places an ongoing responsibility on this Commission to evaluate the public convenience and necessity of proposed transmission projects, and therefore we independently assess the proceeding record to determine whether projects or alternatives are appropriate on the basis of reliability, safety, and economics.

~~19. The 2016 NERC standard does not impact the single contingency feasibility of Alternatives F, G, and J.~~

21. SDG&E is required to comply with the applicable NERC reliability standards pursuant to the Federal Power Act § 215, 16 U.S.C. § 824o; Federal Energy Regulatory Commission ("FERC") regulations, 18 C.F.R. § 40.2; Pub. Util. Code § 345, and the CAISO Transmission Control Agreement.

2220. The No Project alternative does not appear to be consistent with the 2016 TPL-001-4 NERC reliability standard.

2321. Alternatives B.1, B.2, B.3 and B.4 do not appear to be consistent with the 2016 TPL-001-4 NERC reliability standard.

2422. Alternatives C.1, C.2, and D do not appear to be consistent with the 2016 TPL-001-4 NERC reliability standard.

25. A project alternative or mitigation measure is "feasible" under CEQA if it is "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors." Pub. Resources Code Section 21061.1; CEQA Guidelines Section 15364.

26. The No Project Alternative is not feasible because it fails to address any of the SOC reliability concerns, and thus does not achieve any of the project objectives. SDG&E would have an obligation to implement, or where necessary seek authorization to implement, other projects in an attempt to ensure compliance with NERC reliability standards as well as more stringent CAISO standards. To address the SOC reliability issues, SDG&E would pursue other reliability projects, which it estimates to cost $580 - $708

million, far more than the Proposed Project, including rebuilding the 138/12 kV Capistrano Substation, transmission line upgrades, equipment replacements and an alternative second source of power for South Orange County. These reasonably anticipated actions may have greater environmental impacts than the Proposed Project.

27. FEIR Alternative B-1, B.2, B.3 and B.4 are not feasible because each fails to address most of the SOC reliability concerns, and thus does not achieve most of the project objectives. SDG&E would pursue other reliability projects to address the SOC reliability issues, which it estimates to cost $548 - $669 million, far more than the Proposed Project, including rebuilding the 138/12 kV Capistrano Substation, transmission line upgrades, equipment replacements and an alternative second source of power for South Orange County. These reasonably anticipated actions may have greater environmental impacts than the SOCRE Project.

28. FEIR Alternative D is infeasible for reasons including: (a) failure to address some of the SOC reliability concerns and thus to meet project objectives; (b) inability to implement it within a "reasonable period of time" due to requirements to study and mitigate adverse system impacts of the SCE interconnection under FERC-approved tariffs; (c) adverse impacts on the electric grid arising from the SCE interconnection, which will require additional equipment and 138 kV upgrades in SDG&E's SOC system and may require Reliability Upgrades inside or outside SDG&E's SOC system; and (d) excessive ratepayer costs that SDG&E estimates at $518 - $634 million, far more than the Proposed Project, not including the cost of necessary 138 kV upgrades and unknown Reliability Upgrades. These reasonably anticipated actions may have greater environmental impacts than the SOCRE Project.

29. FEIR Alternative F is infeasible for reasons including: (a) a 230/138/12 kV substation cannot be constructed at SDG&E's existing Rancho Mission Viejo Substation that is safe, reliable and conforms to industry standards and the law; (b) failure to address some of the SOC reliability concerns, including rebuilding Capistrano Substation and avoiding load shedding under numerous scenarios, and thus to meet project objectives without considerable additional transmission work; and (c) excessive ratepayer costs that SDG&E estimates at more than $558 - $608.1 million, far more than the SOCRE Project, including rebuilding the 138/12 kV Capistrano Substation but not including necessary 138 kV upgrades. These reasonably anticipated actions may have greater environmental impacts than the SOCRE Project.

30. FEIR Alternative J is infeasible for reasons including: (a) infeasibility of constructing a safe and reliable 230 kV substation on the "AT&T parking lot" that conforms to industry standards and the law, or interconnecting it to SDG&E's existing 138 kV equipment without modification; (b) legal infeasibility due to inability to comply with an applicable RWQCB Order on the allowed space for substation expansion; (c) potential legal infeasibility for one utility to condemn property of another utility; (d) inability to implement it within a "reasonable period of time" due to requirements to study and mitigate adverse system impacts of the SCE interconnection under FERC-approved tariffs; (e) adverse impacts on the electric grid arising from the SCE interconnection, which will require additional equipment and 138 kV upgrades in SDG&E's SOC system and may require Reliability Upgrades inside or outside SDG&E's SOC system; (f) creation of NERC violations; and (g) excessive ratepayer costs that SDG&E estimates at $518 - $634 million, far more than the Proposed Project, including rebuilding the 138/12 kV Capistrano Substation and voltage control devices, but not including property acquisition costs, known 138 kV upgrades and unknown Reliability Upgrades. These reasonably anticipated actions may have greater environmental impacts than the SOCRE Project..

31. Certain Mitigation Measures in the FEIR are infeasible and should be revised. MM AES-1: Architectural Review of San Juan Capistrano Substation should be revised to require SDG&E to consult with ARB and obtain CPUC approval of its plans. Mitigation Measure AQ-1 should be revised to remove the requirement to "track actual daily emissions" as credits are purchased ahead of time. Mitigation Measure CUL-4 should require Indian tribes' expression of interest be timely. Mitigation Measure BR-4 should rely on SDG&E's NCCP/HCP, which already requires restoration of impacted areas. Mitigation Measure TR-3 should be revised as advance notice of planned flight paths should apply only to low-altitude helicopter activities.

32. The reliability benefits of the SOCRE Project outweigh the limited unavoidable adverse environmental effects of the SOCRE Project, including the temporary air emissions and, if the old utility structure is found eligible for listing on the NHRP in the future, the demolition of such structure.

33. SDG&E's SOCRE Project is designed in compliance with the Commission's policies governing the mitigation of EMF effects using low-cost and no-cost measures.

34. SDG&E's Proposed Project is designed in accordance with Commission rules and regulations and other applicable standards governing safe and reliable operations.

35. Pursuant to Public Utilities Code § 1005.5(a), the maximum cost determined to be reasonable and prudent for SDG&E's Proposed Project is $383.6 million +/- 10%.

36. SDG&E's SOCRE Project serves the public convenience and necessity, and SDG&E is granted a Certificate of Public Convenience and Necessity to construct the SOCRE Project.

~~23. Alternative J is meets or exceeds all Commission standards for the issuance of a certificate of public convenience and necessity.~~

~~24. As part of the implementation of Alternative J, equipment at Capistrano Substation found to be inadequate should be replaced.~~

~~25. A CPCN should issue directing SDG&E to begin implementation of Alternative J.~~

~~26. SDG&E should be directed to undertake the studies to identify any legal and regulatory requirements, specify any necessary upgrades to its 138 kV system, and file an application for the two transformer addition related to Alternative J.~~